## Resourceful. Responsible. Reliable.

**Our journey toward a sustainable future.** 

Rain Carbon Sustainability Report 2023



Social

**05** 06

08 09

11

17

**42** 44 57

#### Annex

84

## Table of Contents

Introduction



#### Introduction

1.1	Message from Our President
1.2	Highlights Calendar Year 2023
1.3	About Rain Carbon

#### **Sustainability Strategy**

2.1 Materiality Process	12
2.2 Sustainability Mission and Ambitions	13
2.3 Our Commitment to the United Nations (UN)	
Global Compact and Preparedness to	
Meet the UN Sustainable Development Goals	15
Global Compact and Preparedness to Meet the UN Sustainable Development Goals	15

#### **Environment**

9
51
8
( )

#### **Products**

4.1	Innovative	Products	and	Processes	
4.2	Circularity				

Social	63
5.1 Safe Operations and Employee Health	66
5.2 Employee Empowerment and Continuity	75
5.3 Labor and Human Rights	80

#### Sustainability Governance and Responsible Business Conduct

6.1 Governance Structure	85
6.2 Commitment to Business Ethics and Compliance	87
6.3 Cybersecurity	90
6.4 Stakeholder Engagement	91

#### Data & Performance93

Annex	107
8.1 Stakeholder Engagement	108
8.2 About this Report	109
8.3 GRI Content Index	110
8.4 Independent Assurance Statement	123

Inbound Transportation

**b**H

**Raw Materials** 

0

Social

#### Annex

## Sustainability Mission: Rain Carbon at a Glance

Flexibility in terms of transportation mode for efficient transportation of raw materials and products



Long-lasting supplier relationships for RCI's raw material base



generation and the associated emissions



#### World-class carbon operations with 150 years of experience

- 1,550+ employees. 500+ customers, active in 70 countries
- World's largest producer of calcined petroleum coke (CPC) and among world's largest producers of coal tar pitch (CTP)
- Global footprint with 13 operational sites on three continents
- 80% carbon segment, 20% advanced material segment
- Fuels-to-Materials strategy
- Ø Calcination, distillation and advanced materials plants
- Main products basis for anodes in aluminum production and steel recycling

#### Engagement with local communities

Rütgers Foundation III Pragnya Priya Foundation

#### Enhanced circularity

- Resource efficient business model of upcycling by-products from the heavy industries
- Waste heat recovery
- Calcination waste reused in agriculture Ø



which can be infinitely recycled

3

## Sustainability Mission: Three Pillar Approach

Essential Carbon for a Sustainable Transition

Rain Carbon is a resourceful company that takes by-products destined for combustion and links them instead with value-added products to enable lower carbon emission and environmentally more sustainable outcomes. Setting the Standard



Rain Carbon runs its operations in a **responsible** way, sets high standards, is transparent about its performance and accountable for its results. For Rain Carbon, a sustainable talent ecosystem is important in order to remain a **reliable** partner for the future. We create highly engaging working environments for our employees where collaboration and teamwork are of the highest importance. We leverage this talent ecosystem to constantly grow our in-depth product- and process-specific knowledge.

## Introduction





## 1.1 Message from Our President



## 66

Rain Carbon plays a critical role in multiple aspects of society's sustainable development, and our Company is dedicated to addressing the swiftly-evolving demands of our customers and driving the advancement of our industry in a world aiming for environmentally-friendly, efficient, and innovative products and applications.

#### Dear Reader,

At Rain Carbon, we have a demonstrated and absolute commitment to sustainability. I would go even further to say that sustainability has evolved into an essential part of our corporate DNA. This is reflected in many facets, such as our strong focus on safety and health, our ongoing efforts to minimize the environmental footprint from our operations and in our overall business model itself.

The very foundation of our business model is built on a sustainably focused program. We upcycle by-products from heavy industries which would otherwise simply be burned as fuels or disposed of in landfills. So, by extracting additional value from these industrial by-products, we achieve higher levels of productivity for their carbon - compared to the less efficient combustion of these by-products. Through Rain Carbon's upcycling, we transform these by-products into critical raw materials needed to produce goods that people use in everyday life, while helping to meet growing demand for greener products and a cleaner environment. Over the years, we have turned this concept successfully into our transformative Fuels-to-Materials strategy.

Rain Carbon plays a critical role in multiple aspects of society's sustainable development, and our Company is dedicated to addressing the swiftlyevolving demands of our customers and driving the advancement of our industry in a world aiming for environmentally-friendly, efficient, and innovative products and applications. Simply put, we recognize the paramount importance of our business' success is rooted in our sustainability initiatives and our capability to fulfill our customers' associated requirements in reaching their sustainability initiatives.

Guided by our corporate vision to be the world's most trusted and resourceful provider of diversified carbon products and advanced materials, our businesses are committed to a sustainable environment and maintaining the

ecological, social and economic wellbeing of future generations. In the course of our daily activities at Rain Carbon, the Company aims to maximize the positive and minimize the negative environmental and social impacts arising from our operations; and in the way we operate, we strive to act responsibly in alignment with universal principles of human rights, labor, environmental and anti-corruption standards.

Introduction

Economically, 2023 was a challenging year for our industries. Nevertheless, we consequently moved forward with our sustainability journey: A year ago, we published our first-ever GRIcompliant Sustainability Report for 2022 and have continued to evolve our various sustainability-related initiatives during 2023. These include our revised Human Resources approach, an updated materiality assessment and our commitment demonstrated when we became a signatory of the UN Global Compact in August of 2023.

All of this pays off as we continue to bring our sustainability mission to life. You will notice right at the beginning of this report that we have further developed and improved our report structure compared to last year. We have started this year's report with an easily understandable image highlighting our business model and respective sustainability benefits at the first glimpse. This illustrates our self-image as the carbon link between heavy industry and its by-products and our various end use customer industries. The section also highlights the three core elements of our sustainability mission: (i) 'Essential Carbon for a Sustainable Transition', (ii) 'Setting the Standard' in how we operate and (iii) Our 'Future-Fit' organization.

As part of our ongoing sustainability strategy development, we have revised our Company's materiality assessment for 2023 to refine the scope and direction of specific focal areas, ensuring that they align more closely with the current trajectory of Rain Carbon's strategy development. This process included the adjustment of our ambitions and of our mid-/long-term targets related to our material topics and related focal areas, which are:

- Climate Action
- Monitored and Reduced Air Emissions (Non-Greenhouse Gas)
- Standardized Waste and Water Management
- Safe Operations and Employee Health
- Employee Empowerment and Continuity
- Innovative Products and Processes
- Section Enhanced Circularity
- Respecting Labor and Human Rights in Own Operations and the Supply Chain
- Business Ethics and Governance

This 2023 Rain Carbon Sustainability Report also transparently describes the challenges that we face and our recognized need to continuously improve the way we operate, emphasized by our approach, focus and continuity under our guiding catch-phrase 'Resourceful, Reliable, Responsible'.

Social

Our main products by volume calcined petroleum coke and coal tar pitch - are essential ingredients in the anodes required for the production of lightweight and infinitely-recyclable aluminum. Elsewhere, our PETRORES® and LiONCOAT<sup>®</sup> specialty coatings are used in the lithium-ion batteries required for emission-free electric vehicles, while our NOVARES® resins decrease a car's energy consumption by reducing rolling and abrasion resistance in tires. To further strengthen our position in the energy storage market, specifically in the battery segment, we have committed to build up additional research and application development capabilities as we define the concept for our new innovation center in Canada.

Beyond just producing materials which support sustainable development, we are also investing in state-of-the-art technologies to further minimize our environmental footprint required to produce those materials. This includes for example new oven technology for our distillation facilities which allows for more efficient and less  $CO_2$ - and  $NO_x$ -intensive heating. This and various other initiatives are described in further detail throughout the report. Beyond that, we are constantly considering options how to even further expand our waste-heat recovery systems, which enable us to use the heat from our production processes to generate green electricity and steam to power our own operations and that of neighboring businesses and communities, rather than just letting that heat escape into the atmosphere.

After more than 150 years as an evolving, adapting business, "sustainability" also describes the longevity of our company. With our investments in 21st-century technologies and processes, Rain Carbon is well positioned to continue to make meaningful and sustainable contributions for our customers, communities and investors for decades to come.

With that, I am pleased to present to you Rain Carbon's second publicly available sustainability report, which highlights the important role we play in the global evolution toward a more sustainable world and circular economy.

Gerry Sweeney

**Gerard Sweeney** President. Rain Carbon Inc.

Rain Carbon Sustainability Report 2023

Social

Annex

## 1.2 Highlights Calendar Year 2023

Strategy

Sustainability mission defined

## Data

First external validation of HR and safety data

## **10 Ratings**

EcoVadis



Launch of NOVARES® ECO



Of raw materials are by-products

0.26 TRIR

Total Recordable Incident Rate per 200,000 hours worked

## **Innovation Center**

Approved

## **Life Saving Rules**

2 rules implemented in 2023 with a total of 6 out of 9  $\,$ 

22.3 Hrs

Average training hours per employee

UNGC

Signed in 2023

0.31 Mn mt CO<sub>2</sub>e

Emissions avoided through waste heat recovery

## **Code of Conduct Training**

Implemented

Corporate Sustainability Report 2023

1.3 About Rain Carbon

#### **Operating Worldwide**

Rain Carbon Inc. (referred to as 'Rain Carbon', 'RCI', or 'the Company') is a leading global manufacturer of carbonbased industrial raw materials used to produce carbon products and advanced materials. With a history spanning 150+ years, the Company has been converting industrial by-products destined for combustion into valuable raw materials for clients worldwide. These products enable customers to manufacture various materials, such as aluminum, steel, titanium dioxide, plastics, lithium-ion batteries and tires. Rain Carbon Inc., headquartered in Dover, Delaware (USA), functions as a whollyowned subsidiary of Rain Industries Limited ('RIL'), a publicly-traded company based in Hyderabad, India. Additionally, beyond Rain Carbon, RIL also enjoys a presence in the cement industry with its second business branch known as Rain Cements Limited. Acting under RIL as a holding company for its carbon-based businesses, Rain Carbon consolidates multiple entities under a single, global management team, combining their ever-growing know-how in carbon-based materials.





A global leader and innovator in the production of industrial carbon materials

**Head Office** 

Social



In Dover, DE, USA

Active on six continents



Social

Annex

#### **Rain Carbon's Global Presence**



## Sustainability Strategy

Environment

Annex

## 2.1 Materiality Process

In 2021, Rain Carbon conducted its first materiality assessment to identify its most significant impacts on the environment, economy and people. This assessment served as the cornerstone for formulating the Company's global sustainability strategy.

Introduction

In the initial phase, Rain Carbon identified potential material topics by examining peer benchmarks and following guidelines from industry groups such as the Verband der Chemischen Industrie (VCI) in Germany. During a workshop with internal stakeholders, each topic underwent assessment based on its strategic importance to the business and its relevance to stakeholders. In addition, colleagues were chosen to represent both internal and external stakeholder perspectives across various business segments and functions. The selected topics were approved by Rain Carbon's Sustainability Steering Committee (SSC) and presented to the Board of Directors.

In the next step, Rain Carbon evaluated all topics concerning the potential and actual positive and negative impacts on the environment, people and economy, resulting from its business operations. The Company assessed these issues across the entire value chain, applying criteria like scale, scope, irremediability and likelihood, according to the recommendations of the Global Reporting Initiative (GRI) Universal Standards 2021. Through this assessment, Rain Carbon identified seven topics deemed material for the Company due to their impact on sustainable development. These topics were further reviewed and approved by the SSC.

Considering both the effects of Rain Carbon's business activities on sustainable development and the strategic importance of sustainability topics in its business helps the Company reduce negative impacts and strengthen positive impacts. It also heightens the Company's awareness of the risks associated with sustainability issues for its business success.

In 2023, Rain Carbon conducted a thorough review of its list of material topics, identifying two additional material topics: Labor & Human Rights and Business Ethics & Governance. This review process was conducted in close association with identifying the material topics for the Company's sister organization Rain Cements Limited (RCL) and their ultimate parent/holding company, RIL. The sustainability team internally reviewed and refined these additional topics, which were then discussed throughout the Company, and presented to the SSC. As part of

Social

this process, the topic 'Organizational Resilience' was renamed 'Talent and Capability Development' and 'Circularity of Feedstocks' was rephrased to 'Circularity', aiming to sharpen the scope and direction, and better align with Rain Carbon's current strategy development.



Introduction

Environment

Social

## 2.2 Sustainability Mission and Ambitions

In early 2021, Rain Carbon initiated a strategy process, which began with a materiality assessment (see 2.1 Materiality Process). The material topics identified were then clustered into three subject areas: Environment, Social and Products. For each material topic, the Company identified one focal area that it wanted to prioritize and set an overall strategic orientation. Together with identifying the department responsible for each topic, Rain Carbon also defined mid- to long-term ambitions and a first set of measurable targets. The targets are carefully reviewed in an annual process, and the latest developments and some necessary changes are explained throughout the report.



Business Ethics and Governance



click into icon to directly jump to the respective target section Environment

Annex

Rain Carbon has defined individual ambitions and goals for the focal areas. The beginning of each topic chapter shows these, including their current degree of achievement. In 2023, the Company further developed its first sustainability strategy process by defining its sustainability mission. Based on the results of a workshop, Rain Carbon defined its new sustainability mission, which builds on the material topics and focal areas developed over the last two years. The Company's sustainability mission now encompasses the following three pillars describing its contributions to sustainable development and its forwardlooking approach.

Introduction

#### Essential Carbon for a Sustainable Transition

Rain Carbon is a resourceful company that takes by-products destined for combustion and links them instead with value-added products to enable lower carbon emission and environmentally more sustainable outcomes. This includes the following:

 Following our Fuels-to-Materials strategy, our business model focuses on waste minimization and upcycling of by-product streams, such as Green Petroleum Coke (GPC), coal tar and petroleum streams.

- The aluminum industry depends on anodes based on our conductive carbon products. We consider the electrochemical use of carbon a more beneficial use than the pure thermal use of carbon.
- Benefits down the value chain:
  - Carbon anode material for aluminum production (aluminum for lightweight applications).
  - Carbon solutions for lithium-ion batteries.
  - Resin and carbon black materials for tires with reduced rolling resistance.
  - Rain Carbon products as raw materials for improved building insulation.
  - Products used in food packaging to prolong the shelf life.

#### **Setting the Standard**

Rain Carbon runs its operations in a responsible way, sets high standards, is transparent about its performance and accountable for its results. As indicated by our priorities:  Strong focus on safety culture across the Company, covering both process safety, and occupational safety.

Social

- Minimization of environmental footprints by first-class technology and products (LDAR, scrubbers, PETRORES<sup>®</sup>, and CARBORES<sup>®</sup>).
- Commitment to transparent supply chains.

#### **Future-Fit**

For Rain Carbon, a sustainable talent ecosystem is important in order to remain a reliable partner for the future. We create highly engaging working environments for our employees where collaboration and teamwork are of highest importance. We leverage this talent ecosystem to constantly grow our in-depth product- and process-specific knowledge. Major elements include the following:

- Customers appreciate our carbon competence driven by 150 years of experience.
- Talent ecosystem aims to find solutions to new challenges.
- HR technology investments improve our ability to attract and support talent.
- Specialized products and processes require a specialized workforce and skills.

Introduction

Data & Performance

Annex

# 2.3 Our Commitment to the United Nations(UN) Global Compact and Preparedness toMeet the UN Sustainable Development Goals

During 2023, Rain Carbon became a signatory to the United Nations Global Compact, formalizing the Company's support of its 'Ten Principles' on environment, human rights, labor and anti-corruption. The Company is committed to incorporating these principles into its business strategy, corporate culture and day-to-day operations and supporting the UN's 17 Sustainable Development Goals (SGDs).



**Gerard Sweeney,** President Rain Carbon Inc.

#### 66

With our ongoing focus on these SDGs and our commitment to the Ten Principles of the UN Global Compact, Rain Carbon is well positioned to make meaningful and sustainable contributions for our many stakeholders for years to come.



Social



The UN's 17 SDGs are the core of the UN 2030 agenda for sustainable development, which functions as a global plan to fight poverty, endorse sustainable prosperity and protect the planet. Rain Carbon identified eight 'priority SDGs' with the highest potential to minimize negative and maximize positive impacts. The priority SDGs were identified based on the

<u>SDG Sector Roadmaps</u> for the chemical industry and on an internal analysis conducted in 2021.

Rain Carbon's contributions to the SDGs are described in the respective chapters of this report.

Social

Many of the Company's products and activities have a positive influence on single or multiple SDGs. However, Rain Carbon is also aware that some of its products and processes have a negative impact on the SDGs, and the Company consistently strives to minimize these impacts associated with its products or business activities.



## Environment





Society depends on nature and the environment for essential, life-sustaining needs, such as clean air, water and food. Ongoing environmental degradation, climate change, pollution and other factors already have negative impacts on the way of life, as well as on the economy. These impacts are expected to increase in the future. Regulatory bodies around the world have taken action to fight this degradation by reducing allowable emissions and advancing a more circular economy.

Introduction

As emphasized in Rain Carbon's sustainability mission, the Company provides 'Essential carbon for a sustainable transition'. Taking by-products destined for combustion and creating value-added products from them is Rain Carbon's core business and is emphasized within its Fuels-to-Materials strategy. The emissions released during the combustion process are avoided. Additionally, Rain Carbon's products enable lower carbon emission and environmentally more sustainable outcomes.

Rain Carbon runs responsible operations where negative impacts on the environment are kept to a minimum. This is what the Company means by 'Setting the Standard.'

#### Environmental Data Management

Employees at Rain Carbon's production sites are responsible for handling local environmental data. On a corporate level, environmental data is managed by its Global Safety, Health and Environment (SH&E) and Corporate Sustainability departments.

The local and Global SH&E departments handle all environmental data with respect to requirements from local authorities, such as environmental permits and incidents. On a global level, every Rain Carbon site is required to submit environmental data each month via the Global SH&E department's key performance indicators (KPI) tracking system. The Corporate Sustainability department is responsible for collecting and consolidating environmental data from each Rain Carbon site once per year regarding its material consumption, energy, GHG emissions, other air emissions, water and waste, following the GRI standards and indicators, which is the basis for the environmental data presented in this report. The 2023 data presented in this report was externally validated, as stated in the independent assurance statement. The independent assurance statement is presented in the Annex on pages 123 and 124.

#### **Commitment to the Environment**

Social

As part of Rain Carbon's Global SH&E Policy, the Company is committed to conducting business with respect and care for the environment and to eliminating all environmental incidents from its activities. The Global SH&E Policy outlines the Company's global engagement and forms the underlying framework for further site-specific measures.

### Rain Carbon's Global SH&E Policy contains the following commitments:



Protect the health and safety of all who are part of our operations, live in the communities where we operate and use our products.



Conduct business with respect and care for the environment.



Have a systematic approach to SH&E management designed to ensure compliance with all laws and achieve our commitments to SH&E.



Eliminate all injuries, occupational illnesses, unsafe practices and environmental incidents resulting from our activities.



Strive for world-class operating excellence by integrating our SH&E principles throughout our businesses with a focus on continuous improvement.

Include SH&E performance in the appraisal of our staff.

Data & Performance

## 3.1 Climate Action

Introduction





### SDG 7 Affordable and Clean Energy (sub-target 7.3)

We continuously work toward increasing energy efficiency by implementing energy management systems, investing in steam and electricity cogeneration and waste-heat recovery plants, and utilizing the energy made by our own processes to the greatest extent possible.

#### **SDG 13 Climate Action**

As a company with energy-intensive processes, GHG emissions and energy are material issues for us. We work to reduce GHG emissions from our process by implementing energyefficiency projects and installing waste-heat recovery systems. Furthermore, our products have the potential to additionally reduce GHG emissions in downstream products. For example, our PETRORES® enables a longer lifetime and improved energy efficiency of lithium-ion batteries, which are essential for decarbonizing the mobility sector.

Social

#### Case Study: Positive effects of lightweight materials on the carbon emissions of vehicles

Introduction

One factor that can positively impact carbon emissions is the reduction of vehicle weight, achievable through the use of lightweight materials such as aluminum. The average weight reduction achieved through these materials over the last 20 years was 11.3%. Since a 1% reduction in weight can result in a 0.7% fuel savings per passenger car, this translates to an average fuel saving of 7.92% per vehicle and a corresponding reduction of 4.62% in CO<sub>2</sub> emissions. This highlights the significance of lightweight materials in meeting global emission targets.

[Source: An assessment of using Aluminum and Magnesium on  $CO_2$  emission in European passenger cars Yigit Türe a, b, Cengiz Türe (2020)]

Several of Rain Carbon's partners within its value chain operate in carbon-intensive industries, such as petroleum refining and steel production, whose by-products are Rain Carbon's raw materials. The Company's processes are energy intensive and result in emissions of greenhouse gases (GHGs) and potentially harmful materials like nitrogen oxides (NO), sulfur oxides (SO) and particulate matter (PM), through hydrocarbon combustion and chemical processes. Although RCI has implemented various measures to increase efficiency and reduce emissions from combustion, minimizing GHG process emissions presents a more challenging task. These emissions primarily consist of CO<sub>2</sub> generated from chemical reactions within the Company's production facilities and are directly linked to its production output.

Rain Carbon's key raw materials are industrial by-products that otherwise would be combusted as fuel substitutes. generating very high GHG emissions or disposed of as waste. Following the Company's mission of providing essential carbon for a sustainable transition, it follows a Fuels-to-Materials strategy by upcycling these by-products into valueadded, carbon-based materials, enabling the Company to maximize their productive use by society. Rain Carbon's products are necessary for the production of lithiumion batteries used in electric vehicles: for electrodes required for steel recycling; and for the production of aluminum, essential for various lightweight applications.



Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Anne



Our business model is primarily based on the upcycling of by-products from other industries. For our advanced materials business, we have also started to incorporate certified renewable or recycled raw materials.

We upcycle feedstocks with high carbon content like green petroleum coke (GPC), pyrolysis fuel oil (PFO), tar and renewable/recycled feedstock into value-added productive materials. This avoids the incineration of those raw materials for energy generation with the associated emissions. We avoid emissions through the efficient use of the raw materials, as well as the utilization of excess energy from our processes to generate electricity or steam without additional emissions.

Through our productive carbon products, we provide essential materials for several industries like aluminum production and batteries. We also enhance circularity in downstream markets like steel recycling, and improve the sustainability of end applications like lithium-ion batteries for e-mobility, tires with reduced rolling resistance, and coatings for long-lasting infrastructure.

#### **Climate Action**

Introduction

#### Ambitions

- Aim to enhance the energy efficiency of our processes.
- Intend to significantly reduce our Scope 1 and 2 GHG emissions.
- Strive to assess and reduce our Scope 3 GHG emissions.

#### Targets

- Define a mid- to long-term Scope 1 and 2 GHG reduction target by the end of 2025.
- Evaluate Scope 3 emissions by 2024.
- Achieved On track On hold New

## Ambition and Target Status

When looking at Rain Carbon's carbon footprint and GHG intensity, it is important to take into account the different production processes involved in its operations. The carbon calcination process in particular generates greenhouse gas emissions, most of which are made up of the unavoidable combustion of the volatile matter and fines inherent in the process' GPC raw material. The nature of the calcination process has a higher GHG intensity than the carbon distillation and advanced materials processes in Rain Carbon's operations portfolio. The Company has already invested in the measurement tools and expert employees who are needed

to identify, measure and monitor the sources of its emissions and of its energy consumption needs. Rain Carbon is now working intensively on understanding and using that information to become more efficient in its operations, although the Company has not yet defined a Scope 1 and 2 emission-reduction target. Nevertheless, Rain Carbon continues to evaluate major emission-reduction potentials in line with its overall climate ambitions, including switching to renewable energy sources, electrifying steam production, reducing electrical and steam consumption within its systems, expanding its waste-heat recovery capacities and various forms of process optimization.

Social

Based on various efficiency projects in the areas of carbon distillation and advanced materials, Rain Carbon sees a reduction potential of 12% in specific CO<sub>2</sub> emissions (Scopes 1 and 2) for the business unit which combines these two areas, which is realistic by 2030 (base year 2020). For the calcination area, the Company will increasingly produce materials using its shaft calcination technology, which will bring the specific emissions of its calcination business down further. Rain Carbon aims to define a reduction target by the end of 2025. This aim is supported by representatives from each of the

Company's business units who are part of its Sustainability Core Team. Multiple actions have already been taken at the site level to minimize GHG emissions and energy consumption.

During 2023, Rain Carbon initiated a major cross-company project in order to assess its Scope 3 emissions in line with the GHG Protocol. All Scope 3 categories were evaluated and based on relevance and data availability, the Company selected the most significant categories for its initial Scope 3 data collection. Throughout O3 and O4 2023, the Company started to collect the respective data for 2022 as a pilot to define data collection and calculation processes. The first results suggest that 'Category 11: Use of sold products' as well as' Category 1: Purchased goods and services' have the highest impact on Rain Carbon. The Company will further evaluate the data and establish a comprehensive data collection process throughout 2024.

Rain Carbon plans to include the Scope 3 emission-related data in its general annual sustainability data collection starting next year.

#### Significant Work on GHG Reduction Opportunities

Introduction

In 2023, Rain Carbon started detailed process studies to better quantify  $CO_2$  emissions from its calcining plants. In a first for the industry, the Company has used online analyzers to quantify  $CO_2$  emissions as an alternative and more accurate method than typical mass-balance calculations. The work has



confirmed the very strong dependence between GPC quality and calciner CO<sub>2</sub> emissions. Cokes with a finer average particle size result in significantly higher CO<sub>2</sub> emissions - as much as 30% higher using the same process conditions at a given calciner. The work also underscores the strong CO<sub>2</sub> and SO<sub>2</sub> emissions reduction potential of the Company's proprietary ACP (anhydrous carbon pellets) technology. Removal and agglomeration of fines from the process prior to calcination has the potential to reduce CO<sub>2</sub> emissions by up to 20%. In 2023, one of Rain Carbon's aluminum smelting customers successfully tested ACP on an industrial scale to produce anodes and make aluminum. That means the ACP technology has now been demonstrated at full scale.

The ACP project has been put on hold for now due to challenging market conditions but it remains a viable pathway for Rain Carbon to reduce its calciner  $CO_2$  emissions. The Company is also currently evaluating a detailed carbon capture and sequestration project for its Lake Charles (US) calciner. We have partnered with a US company that owns a  $CO_2$  sequestration site located close to the Lake Charles calciner. Carbon capture and sequestration provides the ultimate solution to substantially reduce/eliminate calciner process emissions but the capital and operating cost for the technology remains high. One benefit in operating a carbon capture plant at the Lake Charles plant is that most of the energy required to operate the plant can be supplied by the waste heat recovery system.

Social

Rain Carbon also started a major body of work in 2023 to investigate biocarbons as alternative raw materials with a net-zero  $CO_2$  footprint. Bio-chars and bio-oils provide the potential to partially replace GPC/CPC and CT/CTP materials in metallurgical processes like aluminum and steel production but the development pathway will be long. There is strong interest from the Company's customer base and we are now working collaboratively with several customers in this area.

Rain Carbon is leading its industry peers in developing solutions to reduce GHG emissions but it will take time to set a hard reduction target for the calcination business that we can be confident of meeting. All the work mentioned above will be summarized in a ground-breaking technical paper that will be presented at the 2024 ICSOBA aluminum industry conference (Oct 2024) and the 2025 TMS aluminum industry conference (Mar 2025). This will follow Rain Carbon's 2022 technical paper quantifying cradle-to-gate CO<sub>2</sub> emissions at the Alouette primary aluminum smelter. This paper was the first detailed  $CO_2$  footprint study of a hydroelectric powered smelter and has been heavily referenced and cited since its publication and presentation at several major aluminum industry conferences .

## 20%

Potential to reduce CO<sub>2</sub> emissions by removal and agglomeration of fines from the process prior to calcination (ACP technology)

Environment

Data & Performance

Annex

#### Monitoring Emissions and Energy Consumption

The Rain Carbon plant operations management teams are responsible and accountable for implementing the Global SH&E Policy and for compliance with Rain Carbon's Global SH&E requirements. As explained on page 18, local site employees are responsible for data collection and monitoring of GHG emissions and energy consumption at their sites. The Corporate Sustainability Team is responsible for consolidating the data at a company level. Additionally, Global SH&E and site SH&E personnel manage reporting information and data to authorities as required by environmental permits. Global SH&E also acts as the subject-matter expert when regulations or permit requirements change. This information is communicated across multiple levels of Rain Carbon.

The Company's energy management systems ensure efficient energy use and prevent unnecessary GHG emissions. The Company's system at the Castrop-Rauxel production facility in Germany has been certified to ISO 50001 since 2014. The systems enable the Company to continuously strive for higher energy efficiencies, for example, by replacing old equipment with newer, more efficient equipment. These energy-management systems also include monitoring planned and actual savings from energy-efficiency projects.

In addition, many of Rain Carbon's sites are certified in accordance with the requirements and guidelines of international standards:

- Germany: ISO Management Systems ISO 9001, ISO 14001, ISO 45001, ISO 50001
- Belgium: ISO Management Systems ISO 9001, ISO 14001 and ISO 45001
- Canada: ISO Management Systems ISO 9001, ISO 14001 and ISO 45001
- US: ISO Management Systems ISO 9001-2015
- India (Visakhapatnam Plant): ISO Management Systems ISO 9001-2015, ISO 14001 and ISO 45001

In addition to the ISO 9001 quality management certification covering general business processes, sites with an ISO 14001 environmental management system must fulfill and/or exceed the requirements using strict targets and control measures.

In 2023, Rain Carbon consistently continued the path of systematically identifying efficiency potential for the use of energy and to implement improvement measures according to prioritization. This was a decisive contribution to reducing energy use and GHG emissions.

Social

#### Improvement of Steam Generation and Consumption

In 2023, the German site in Castrop-Rauxel underwent an overhaul of its steam pipeline network: the overall steam pressure was reduced, unnecessary steam pipes were removed from the system and state-of-the-art venturi steam traps were implemented. These measures, combined with the optimization of the energy center through more efficient flue gas combustion, resulted in 21.0 GWh less natural gas consumption in 2023 vs 2022, reducing by approximately 4,300 metric tons of CO<sub>2</sub>-equivalents. At Rain Carbon's German site in Duisburg, two energy projects were conducted in 2023, reducing steam consumption in the pastillation process by 20% and in the continuous raw material distillation plant by 15%.

At Rain Carbon's Canadian site in Hamilton, the condensate return manifolds and steam tracing lines were replaced in 2023 to increase the recycling rate of condensate. This will allow for reduced steam consumption, leading to lower natural gas consumption and GHG emissions. Several steam-related measures were also implemented at the Company's site in Belgium, including an economizer for one of the steam boilers and an overall improvement in condensate recuperation.

## 21.0 GWh

Less natural gas consumption in 2023 vs 2022 at Castrop-Rauxel

#### Energy Audits and Related Energy Saving Initiatives

Introduction

Rain Carbon's commitment to energy efficiency extends across its global operations. While the Company's German and Belgium plants already have local energy management systems in place, it conducted energy audits at its US and Indian plants.

In India, an energy audit of the Visakhapatnam plant was done in Q2 2023 by <u>The Energy Research Institute</u> (TERI). Among the recommendations was a suggestion that the plant air header pressure be reduced by 0.3 kg/cm<sup>2</sup> resulting in a daily electricity consumption reduction of 600 kWh, totalling 87,000 kWh per year. Furthermore, implementing the practice of switching off cooling fans for the main power transformer and unit auxiliary transformer during low load conditions yielded an additional reduction of 18,000 kWh in 2023.

A detailed energy audit was also completed for all US plants, resulting in a list of capital projects which were identified to reduce energy consumption. The projects have been prioritized over a 3-year period from 2024-2027 and, when fully implemented, should reduce the total electrical energy consumption of Rain Carbon's US sites by ~14%.

Additionally, an online Energy Monitoring System (EMS) was installed at 4 of the 6 US plants. This system is now operational and provides real-time data on energy consumption for all motors and electrical systems within the plants. The data will be used to benchmark existing energy consumption and quantify reductions through capital improvement projects.

A major upgrade was also completed for the kiln burner systems at the Robinson (US) site. The larger capacity burners will allow better temperature control in the pyro scrubbers to ensure complete particulate combustion during process upset conditions, thereby eliminating the potential for any particulate matter emissions.

During the next three years, steam production for Hamilton (Canada) will be electrified allowing the plant to vastly reduce its use of natural gas for steam generation. With grid electricity coming mainly from hydro power, this will reduce GHG emissions. Once the project is finished by 2025, GHG emissions from this site are expected to be cut in half. This will act as a pilot project for the possible implementation at other sites. While energy efficiency is of utmost importance in Rain Carbon's production processes, the Company does not intend to neglect other areas of improvement. In this regard, all sites continued with the LED lighting replacement, and the Company's Belgium site expanded its solar power capacities by installing 40 kW of photovoltaic panels on company grounds.

Social

## Steam Production will be Electrified

Project initiated for Hamilton (Canada) plant



Contents

Sustainability Strategy

Environment

Products

Annex



#### Using State-of-the-Art Technology

Rain Carbon continuously looks for opportunities and technologies to improve its environmental performance, and one key method is adopting modern and efficient technology. The Company continues to explore technological possibilities like carbon capture, utilization, and storage (CCUS) as these technologies evolve and will implement them when they become feasible. RCI is currently undertaking another technoeconomic study of the latest CCUS technology solutions available in the US as economies of scale evolve for projects involving CO<sub>2</sub> pipeline networks and storage systems in areas near Rain Carbon sites. Several of Rain Carbon's aluminum-smelting customers are also evaluating advanced CCUS technologies, and if successful, they are keen on promoting them throughout the raw material supply chain.

In addition to implementing new technologies and evolving production processes, Rain Carbon can make a positive impact by regularly upgrading its existing infrastructure with state-ofthe-art technology. This practice not only ensures the reliability of the Company's production facilities and the safety of its employees but also reduces its environmental footprint. In 2023, one furnace was replaced at the Company's continuous tar distillation unit in Castrop-Rauxel (Germany). Along with meeting new, lower NO, critical values, each new furnace is expected to reduce its specific energy consumption by around 30%. Moreover, another furnace replacement will be carried out in 2024 at the same site.

#### Quantifying and Understanding Emissions Sources

Social

The Corporate Sustainability Team at Rain Carbon gathers annual global sustainability data to measure the Company's impact. The Team consolidates and summarizes environmental data from all sites, including energy usage and GHG emissions.

Rain Carbon's calcination business continuously focuses on quantifying its CO<sub>2</sub> process emissions. The Company has continuous emissions monitoring systems (CEMS) equipped with CO<sub>2</sub> analyzers at three of its calcining plants in Louisiana (US). In 2023, six comprehensive process studies were completed and documented, revealing key insights. The impact of GPC raw material changes has been mentioned previously but the impact of operating equipment condition was also quantified. One study showed the impact of excessive wear on kiln seals intended to reduce air leakage into the system. Unplanned air leakage results in increased CO<sub>2</sub> emissions, highlighting the need to continuously monitor and maintain equipment in proper condition. Based

on these findings, the Company plans to explore opportunities for future emissions reduction.

Rain Carbon also compared CO<sub>2</sub> emissions measured by its CEMS units to those calculated via a mass-balance approach. Stack exhaust temperatures are much higher in plants without waste-heat recovery systems. The higher exhaust temperatures make it extremely challenging for CEMS probes to perform reliably. Consequently, the Company must rely on calculations for its total CO<sub>2</sub> emissions for these highexhaust temperature plants, a task complicated by the numerous process variables that can impact the results. The study shows that Rain Carbon's reported emissions can be anywhere from 5-16% higher when using a mass balance calculation approach compared to actual emissions measured by CO<sub>2</sub> monitors. Further efforts will focus on refining RCI's mass balance calculations for plants where high temperatures make installing CEMS impossible. Additionally, the Company is currently engaged in a project to enhance CO<sub>2</sub> measurement capabilities in the existing CEMS systems at its Visakhapatnam and Atchutapuram calcining plants in India.

#### **Development of Energy Use and Emissions**

Introduction

Since 2018, Rain Carbon has traced and evaluated its energy consumption and GHG emissions in a systematic and standardized way. During this timeframe, the Company faced significant challenges, including a global pandemic and a war in Europe, both of which had substantial impacts on global markets and, consequently, on Rain Carbon's GHG emissions.

Key metrics for the Company include energy input and GHG emissions. With a total energy input of 1.44 Mn MWh, Rain Carbon generates approximately 1.20 Mn tons of CO<sub>2</sub>-equivalent GHG emissions (Scopes 1 and 2). Energy consumption at Rain Carbon, largely driven by the carbon distillation and advanced material facilities, has been continuously decreasing since 2020. On the other hand, the Company's GHG emissions, mainly associated with the carbon calcination process, are closely tied to its production volume.

The calcination plants account for approximately 83% of Rain Carbon's total Scope 1 emissions, with 96% directly linked to the calcination of green petroleum coke, mostly through the

combustion of the GPC's volatile matter and of small, fine particles. The Company plans to optimize its production processes further to enhance the yield of CPC during calcination. Since most of the losses in these raw materials are converted to CO. during calcination, improving the process efficiency can significantly decrease GHG emissions.

Social

The main source of emissions for distillation and advanced materials plants, which account for 17% of total Bain Carbon's total Scope 1 emissions, is the combustion of fossil fuels to generate energy for these production processes (72%). Following closely behind are emissions from chemical processing, like naphthalene (22%).

Corporate Sustainability Report 2023



Rain Carbon's Greenhouse Gas Emissions (Scope 1+2)

Introduction

Environment

Annex

While Rain Carbon's total Scope 1 emissions decreased in 2023, the GHG intensity increased slightly. Various efficiency and fuel-saving measures successfully reduced fuel consumption and related absolute and specific emissions, especially in the distillation and advanced materials businesses. Lower production volumes in these areas also contributed to reduced energy consumption and emissions. However, increased process emissions from the Company's calcination business partially offset these reductions. The rise in process emissions and GHG intensity can be mainly attributed to the ongoing ramp-up of the new calcination plant in Atchutapuram, India, as well as reduced throughput and increased downtime. It is important to note that the Atchutapuram plant was not included in last year's reporting and is not yet operating at its design capacity, resulting in process inefficiencies and higher-than-expected emissions. These issues contributed to higher emissions intensity for the carbon calcination business and an overall increase in Rain Carbon's GHG intensity. primarily due to the significantly higher emissions intensity of the Company's calcination operations compared to its other global operations. Once the new plant is ramped up to its full capacity in the first half of 2025, it will achieve lower

GHG emissions due to the lower GHG intensity of its shaft calcining technology compared to rotary-kiln technology. Moreover, this will have a positive, longterm impact on Rain Carbon's overall GHG intensity.

Scope 2 emissions are relatively small, totaling around 54,000 tons of CO<sub>2</sub>equivalent, and result from the purchase of grid electricity and steam. Currently, emissions are only calculated using the location-based method, but there are plans to also include the calculation of Scope 2 emissions using the marketbased method in the future. The increase in Scope 2 emissions in 2023 compared to the previous year was mainly due to the natural gas crisis in Europe. Under those conditions, the site in Castrop-Rauxel switched from producing its own electricity from gas in-house to purchasing more grid electricity, thereby shifting Rain Carbon's respective emissions from Scope 1 to Scope 2. This effect was even stronger because the emission factor of the grid electricity in Germany was worse than the Company's in-house production. Regardless, Scope 2 emissions remain relatively low overall at Rain Carbon, as the calcination process requires minimal energy input and generates excess/waste heat, which the Company then utilizes to power its own operations.

Besides generating electricity and steam from waste-heat recovery, Rain Carbon has begun to install low-level photovoltaics at some sites and is assessing strategic cooperation with industrial companies to install largerscale photovoltaics at its sites, as the Company's sister organisation Rain

Social

Cements Limited, has done in recent years. Additionally, by generating green electricity to meet its demand and purchasing more and more renewable electricity from other providers, the Company could lower its Scope 2 emissions significantly.



Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Anne

#### Waste-Heat Recovery and Avoided Emissions

Since 1982, Rain Carbon has reduced its emissions by using energy from its own waste heat recovery (WHR) systems and plants which generate industrial steam and/or electricity. These systems reduce the need for additional energy from external sources and maximize energy efficiency (i.e. avoid loss of energy that has already caused GHG emissions).

The electricity and steam generated from Rain Carbon's waste-heat recovery systems are first used internally, with any excess energy being exported to nearby companies and local power grids. These processes are implemented across most of the Company's global sites. This approach enables Rain Carbon to mitigate the respective  $CO_2$  emissions from power stations that produce an equivalent electrical output.

#### **Carbon Calcination based Waste-Heat Recovery Process**



Social

0.31 Mn mt of CO<sub>2</sub>e

In 2023, Rain Carbon generated 913 GWh of energy through waste-heat recovery systems. By using WHR systems, the Company avoided roughly 309,000 tons of  $CO_2$ -equivalent GHG emissions. These avoided emissions are calculated using factors like generated MWh, local grid emission factors, natural gas combustion and efficiency factors. The decrease in avoided emissions compared to the previous year was ~40,000 metric tons of  $CO_2$ -equivalent, which can be attributed to the reduced power production from WHR during the reporting year.

In the calcination business, Rain Carbon generates and sells significantly more energy (725 GWh) than it needs to operate its plants (291 GWh). This accounts for the Company's relatively low overall energy consumption and is the reason why Rain Carbon opts for 'energy input' as its internal monitoring indicator instead of 'energy consumption'. With lower production volumes, self-generated energy from WHR also decreased in 2023. Avoided by WHR

## 913 GWh

Generated by WHR

However, as Rain Carbon intends to ramp up production volumes again, these numbers are expected to increase in the future.

Aiming to enhance this positive effect, the Company continues exploring additional WHR potentials and avoiding unnecessary energy consumption. For example, in 2023, Rain Carbon installed pitch coolers at its Hamilton (Canada) site, which recover heat from its hot oil system. These new coolers replaced the previously-used natural gas heater, saving approximately 3,000 MWh/year and 510 tons of CO<sub>2</sub>. The full, positive impact of these newlyinstalled pitch coolers will be seen in 2024, as they reached full operating capacity in February 2024.

#### Rain Carbon's Avoided Emissions and Greenhouse Gas Emissions (Scope 1 and 2) per Business Unit



Rain Carbon Sustainability Report 2023

Environment

Products

Annex

## 3.2 Standardized Waste and Water Management



#### SDG 6 Clean Water and Sanitation (sub-targets 6.3, 6.4)

Introduction

We rely on water in several of our production processes, and we are aware of our responsibility with regard to protecting and preserving this valuable resource. We are also a supplier of the key raw material in activated carbon, which is used to absorb hazardous chemicals from air, water and in wastewater treatment applications. Introduction

Annex

As a chemical manufacturing company, Rain Carbon's operations generate both non-hazardous and hazardous waste and wastewater, which can pose environmental and health risks if not properly treated and disposed of. Waste is generated during the Company's major production processes: carbon calcination, carbon distillation, and the production of advanced materials. However, as Rain Carbon's business model is founded on resource efficiency and based on a high conversion rate of raw materials, the amount of waste generated is minimal. By implementing effective wastemanagement programs that focus on reducing, recycling, and reusing different waste streams, the Company can further minimize its environmental impact. This approach aligns with the expectations of Rain Carbon's stakeholders, who believe that industrial companies should responsibly manage waste and continuously optimize their processes to reduce waste generation.

Freshwater serves several industrial needs at Rain Carbon's sites, including cooling and steam generation. Depending on the site, the Company extracts freshwater for industrial purposes from groundwater, river water, or seawater, as well as through third-party suppliers. In regions facing water scarcity, such business activities can exacerbate the situation and reduce water availability for local communities. Consistent with its commitment to resource efficiency, Rain Carbon strives to improve its water efficiency practices.

While serving different purposes, water can become contaminated with chemicals from the Company's production processes, posing potential risks to the environment and public health, as mentioned above. Recognizing this, Rain Carbon has implemented sewage systems to treat wastewater before it is released back into water bodies.



Social

#### **Standardized Waste and Water Management**

#### Ambitions

- Aim to establish a standardized annual assessment of local operations, improvement potentials (e.g., stream separation), including exchange of best practices between sites and business units.
- Intend to continuously evaluate best practices to reduce global footprint in the areas of waste and water.

#### Targets

- Establish an annual exchange of best practices (non-GHG air emissions, waste, and water) on a business unit level (2023).
- Establish an annual exchange of best practices (non-GHG air emissions, waste and water) on a global level (2024).
- Develop a systematic approach toward evaluating best practices.

Achieved • On track • On hold • New

Environment

Annex

Data & Performance

## Ambition and Target Status

Rain Carbon aims to achieve the highest level of resource efficiency by maximizing the conversion of raw materials into products, thereby minimizing waste and wastewater volumes. Whenever possible, both hazardous and nonhazardous waste are recovered and reused. Any local waste that cannot be reused is disposed of in compliance with local and/or national environmental regulations, and wastewater undergoes appropriate treatment. As many of Rain Carbon's primary products are derived from by-products of the petroleum and steel industries, the Company efficiently reduces product waste from these and other industries, while also maximizing the carbon productivity of these byproducts. Furthermore, Rain Carbon is committed to facilitating the exchange of resources between sites to capitalize on synergy opportunities.

With respect to the Company's targets, it has established an annual exchange of best practices (non-GHG air emissions, waste and water) on a Business Unit level. In 2023, the Company implemented semiannual virtual video conferences for these purposes. During these meetings, each site discusses ongoing activities to facilitate mutual learning and leverage knowledge across the Company.

Rain Carbon is well on track for the other two remaining targets. The Company plans to establish a similar annual exchange of best practices on a global level in 2024. Furthermore, it intends to allocate resources within the Global SH&E department to help develop a systematic approach toward evaluating best practices.

#### Global Policies Adapted to Local Conditions

Local policies have been established by some sites to strengthen Rain Carbon's global commitment to preventing and reducing waste and wastewater streams. Similarly, the Company works to minimize its water consumption with respect to local regulations as well as to reduce any direct impacts on the surrounding community.

In addition to the global environmental data collection, waste and water streams are tracked monthly at the site level, with follow-ups on amounts, planning and other activities. This is necessary because certain local sites have specific waste and wastewater permits with prescribed limits. Rain Carbon's production facilities report monthly and quarterly environmental indicators, including waste streams and data, to the local regulatory agencies. Wastewater streams are monitored more frequently, as their potential impacts can be greater. Additionally, depending on local requirements, wastewater streams are tracked continuously or on a daily, weekly or monthly basis.

Social

Apart from the central approach, local waste and water management is handled by each site individually, with local site personnel maintaining waste inventories. All of Rain Carbon's sites meet or exceed the permit requirements that were set up by the local regulatory agencies. Monitoring is established where necessary to comply with regulations, and the sitespecific waste management approach is based on local legal requirements and regulations. Additional requirements apply to sites with an environmental management system, especially at Rain Carbon's ISO 14001-certified locations. (see page 24, for the list of certified sites).

While there is currently no company-wide management system in place for water and wastewater, apart from the Global SH&E Policies, individual sites manage these through their local personnel. The Company will foster the semiannual virtual video conference format, which it had initiated in 2023 to ensure ongoing best

### Semiannual best practice exchange established

Virtual conferences implemented since 2023

Social

Annex

practice exchange. The agenda covers a range of topics, including discussions on incidents and their mitigation, initiatives undertaken to enhance site safety and environmental performance (such as using equipment for water and air pollutant reductions and equipment for employee and process safety measures). Furthermore, participants exchange ideas on the effectiveness of new initiatives and identify areas for improvement, ensuring continuous enhancement of Rain Carbon's practices.

## Minimizing Waste in Production

Given the various production processes and conditions at Rain Carbon's sites, implementing site-specific measures is essential for achieving targets efficiently and effectively. Nevertheless, waste minimization remains a guiding principle across all of the Company's sites.



At Rain Carbon's plant in Hamilton (Canada), for example, the Company recovers the pitch residues from emptied storage tanks in special vacuum boxes during tank maintenance periods, eliminating fugitive pitch-dust emissions.

The pitch dust could otherwise threaten the health of people and wildlife in the surrounding areas. The recovered pitch residues are then remelted for use as a saleable product. This internal recycling not only reduces hazardous waste and eliminates potential negative health effects on employees and surrounding communities, but also closes another material cycle.

At the Zelzate plant (Belgium), Rain Carbon removes sulfur from the highpurity benzene production to a level of <1 ppm. This sulfur is converted to sulfuric acid, which is then sold to other industries for additional applications. This practice aligns with the Company's overall business model, wherein by-products or waste components are repurposed into useful chemicals instead of being discarded.

In line with the waste-minimization principle the lime by-product from Rain Carbon's US calcination facilities and their flue-gas desulfurization systems is used in a variety of geomechanical applications. The Company has obtained beneficialuse permits for use in soil-stabilization applications. This is preferable to simply landfilling this by-product as it both prevents the negative effects of landfilling and offers environmental benefits. Work is also underway to approve using spent lime in agricultural applications and road construction. At Rain Carbon's Visakhapatnam calcination site in India, the spent lime generated by its flue-gas desulfurization has been used to produce construction bricks for years.

Introduction

Annex



The total hazardous and non-hazardous waste volumes show some peaks over the years. This is related to construction activities, which usually lead to a peak for non-hazardous waste volumes and tank cleaning activities, which, in turn, lead to irregular peaks of hazardous waste volumes. In 2023, a total of approximately 100,500 mt of waste was generated, of which 71% was non-hazardous (see chapter Data & Performance, pp. 97). In general, only very little hazardous waste occurs at Rain Carbon's calcination plants due to the nature of the production process (<1%). The total waste generated stayed at a similar level to that of previous years. The slight decrease in waste volume can also be attributed to the overall lower production volumes in the reporting period.

To further increase positive impacts from the Company's waste streams in the future, it intends to implement bestachievable control technologies. These may include waste collection and recovery systems or increased waste monitoring and treatment systems, in accordance with any local environmental permit changes.

Rain Carbon's waste management at Hamilton (Canada) was further developed in 2023. A stringent product waste management was implemented for the truck unloading processes, which led to the avoidance of coal tar raw material waste and enabled the Company to reuse waste volumes as raw material feedstock wherever possible. A specific focus was put on reducing the amount of tar disposed of as hazardous waste from tar truck unloading. In 2023, this specific source of waste was reduced by 27.75 mt from the total 2022 amount of 111 mt, which is a 25% reduction. Furthermore, Rain Carbon will install a new recycling system at Hamilton (Canada) in 2024 to further reduce its waste generated from truck unloading and to bring the waste volumes for this process down to 60 mt by the end of 2024.

Social

## Water Management at Rain Carbon

Rain Carbon employees maintain internal wastewater treatment and sewage plants on site. If no internal wastewater treatment is available, thirdparty contracts are in place to ensure a compliant treatment of wastewater.

At the plants in India, a zero-effluent policy is in place, which prescribes the treatment and reuse of wastewater and prevents any discharge offsite. Purified water is used to water the Company's green belts, which are dedicated areas of greenery planted around Rain Carbon's sites in India.

Various actions have been taken and are being planned further to reduce Rain Carbon's impact on water bodies, either through water withdrawal or wastewater discharge. All wastewater streams at the Company's sites are collected and treated internally or externally through third-parties. In general, Rain Carbon tries to divide wastewater streams as early as possible to reach a best-achievable recycling rate and use specifically adjusted sewage techniques for each separate stream.

In 2023, the Company undertook a crosscompany project involving all its sites to understand water consumption and usage better and developed a respective water balance scheme. The Company is committed to improving data quality to optimize related water management. Water is mainly used for cooling processes and steam generation across all sites. Moreover, Rain Carbon endeavors to maximize water recycling wherever feasible.

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex
				•				



#### Footnotes

#### Data included for only following sites:

Robinson (Intake, Consumption, Discharge) Gramercy (Intake, Usage, Consumption, Discharge), Norco (Intake, Usage, Consumption, Discharge), Visakhapatnam (Intake, Usage, Consumption, Discharge), Atchutapuram (Intake, Usage, Consumption, Discharge), Castrop Rauxel (Intake, Consumption, Discharge), Zelzate (Intake, Consumption, Discharge) Hamilton (Intake, Usage, Consumption, Discharge)

#### <sup>a.</sup> Rainwater:

Estimations, calculated based on the surface area of sites and average rainfall (not estimated for Atchutapuram, Visakhapatnam, Castrop-Rauxel).

<sup>b.</sup>Unaccounted water:

Value computed to have a closed balance, assumption that this is mostly unaccounted rainwater and intake from surface water.

Based on information from production sites (partly on measured flow meter data and partly estimations); Gramercy and Norco site: assumed the excess intake to be a part of total consumption to close the balance.

<sup>d.</sup> Total discharge:

Based on information from production sites (partly on measured flow meter data and partly estimations).

#### e. Recycle/ reuse:

Estimations based on information from production sites (not all relevant recycled and reused volumes included).


Sustainability Strategy

Annex



Due to some sites' structures, rainwater contamination can be possible. Where this is the case (e.g., in Duisburg and Castrop-Rauxel (Germany), and Hamilton (Canada)), rainwater is collected and treated to minimize external impacts. At the Zelzate (Belgium) plant, for example, leak-free pumps and periodical measurement systems have been installed and are accompanied by routine inspections by the site personnel. As pumps and other equipment are generally mostly located outdoors, leakage prevention is an important measure against rainwater contamination.

Another example is at the Gramercy (US) calcination plant, which operates

# 17,000 m<sup>3</sup>

Decrease of tar wash water from 2022 to 2023 at Castrop-Rauxel

a water-treatment plant. This increases the recycling rate and minimizes the scrapping of GPC raw material, as small particles of green petroleum coke fines lost during the calcination process are recovered from settling ponds on the plant site. The recovered GPC fines can then be recycled back into the process as feedstock, which can then be transformed into a usable CPC product. Since 2018, this has minimized raw material waste at the plant and its respective discharges into the environment.

Social

Several studies have been conducted at different sites to assess the potential to recycle water and avoid wastewater by using activated charcoal or reverseosmosis. Those technologies can filter hazardous substances from wastewater to improve its quality to a level where it can be reused or safely disposed of.

In Hamilton (Canada), significant progress has been made in several key areas. The update on the reverse osmosis unit, slated for completion by 2024, shows promising developments, with the new units delivered and installation underway. The reverse osmosis plant, aimed at enhancing water recycling efforts, is expected to decrease wastewater in the city sewer and increase boiler feed water recycling rates, subsequently reducing blowdown and steam consumption. Additionally, replacing condensate return manifolds and steam tracing lines has been completed, reducing steam usage and lowering natural gas consumption and GHG emissions. Moreover, the installation of a pipe reactor utilizing hydrogen peroxide to oxidize H<sub>2</sub>S to elemental sulfur is underway, facilitating effective removal of bio sludge.

In Zelzate (Belgium), ongoing tests and studies are being conducted to

produce reverse-osmosis-water. This water, which has been ultra-filtered to become demineralized water, could potentially save 9000 m<sup>3</sup> of city water per month. Further, the optimization of the wastewater treatment plant's piping in 2023 resulted in a 10% increase in discharge amount, with additional optimizations planned for 2024.

Moving to Castrop-Rauxel (Germany), notable advancements include successfully piloting a new pre-treatment plant in 2023, with plans to order a scaled-up plant in 2024. Additionally, a new service water treatment plant was put into operation in February 2024. Efforts to reduce wastewater from cleaning, minimize tar wash water, and the closure of one of Rain Carbon's production units have collectively led to a substantial decrease of 17,000 m<sup>3</sup> in wastewater volume in 2023 compared to 2022. Introduction

Products

Annex

# 3.3 Monitored and Reduced Air Emissions (non-GHG)

**3** GOOD HEALTH AND WELL-BEING



SDG 3 Good Health and Well-Being (sub-target 3.9)

Safety and health are of central importance to us during manufacturing and the downstream use of our products. We are committed to reducing our impact on the environment and neighboring communities through multiple measures, such as continuous emissions-monitoring systems and our leak-detection and repair projects. 2 RESPONSIBLE CONSUMPTION AND PRODUCTION

SDG 12 Responsible Consumption and Production (sub-target 12.4)

Taking responsibility for our actions is expressed through our multiple measures to reduce environmental emissions, such as our widespread use of flue-gas desulfurization.



Introduction

Annex

Apart from GHG emissions, Rain Carbon's production processes also lead to the release of other air emissions, such as sulfur oxides  $(SO_x)$ , nitrogen oxides  $(NO_x)$ , and Volatile Organic Compounds (VOC), among others. To minimize negative impacts on health and the environment, the Company strives to reduce the generation and release of these air emissions. It is the Company's ambition to foster the exchange of best practices and other information between its production sites to realize synergy potential.



#### Monitored and Reduced Air Emissions (Non-GHG)

#### Ambitions

- Aim to establish a standardized, annual assessment of local operations and improvement potentials (e.g., stream separation), including the exchange of best practices between sites and business units.
- Strive to continuously evaluate best practices to reduce Rain Carbon's global footprint in the area of non-GHG air emissions.

#### Targets

- Establish an annual exchange of best practices (non-GHG air emissions, waste, and water) on a business unit level (2023).
- Establish an annual exchange of best practices (non-GHG air emissions, waste and water) on a global level (2024).
- Develop a systematic approach toward evaluating best practices.
- Achieved On track On hold New

# Ambition and Target Status

Social

With respect to Rain Carbon's targets, it has managed to establish an annual exchange of best practices (non-GHG air emissions, waste and water) at a business unit level. In 2023, we have implemented semi-annual meetings in the format of virtual video conferences.

In these meetings, each site updates ongoing activities, creating an opportunity where all sites can share and leverage each other's knowledge for mutual benefit. The agenda of these meetings encompasses various topics, such as incidents and their mitigation strategies, knowledge sharing about equipment deployed for reducing water and air pollutants, and ensuring employee and process safety. A key aspect of these gatherings is the open sharing of ideas regarding the effectiveness of new initiatives and challenges of not-sosuccessful projects.

Besides, Rain Carbon is well on track for the other two remaining targets, as it plans to establish a similar annual exchange of best practices on a global level for 2024 and to add a resource within the Global SH&E department to support developing a systematic approach towards evaluating best practices.

### Monitoring and Reducing Non-GHG Air Emissions

Local air emission topics are managed by each site individually, mainly through an environmental permit system in conjunction with local regulatory agencies. Monitoring of air emissions is established where required by regulations and follows site-specific approaches based on these local requirements. Local site employees are responsible for data collection and monitoring of air emission data, while the Corporate Sustainability team is then responsible for consolidating the data on a company-wide level.

Each year, Rain Carbon's ISO 14001-certified sites go through a review process to assess areas of potential improvement that could reduce emissions. This review includes updates to key processing equipment, including, but not limited to, scrubber systems, off-stream gas-routing systems, waste collection and tracking systems, and outfall monitoring systems. All systems must meet or exceed site environmental permit requirements.

Rain Carbon has various tracking and monitoring mechanisms installed at its sites to ensure the measures we Environment

Annex

implement serve their intended purpose. Three of the Company's six US calcination plants at Chalmette, Lake Charles and Norco, as well as its calcination plants in India, have local tracking processes, such as continuous emissions monitoring systems (CEMS), site alarms and other monitors that are connected to a distributed control system. The CEMS are used for ongoing permit compliance and have to be tested annually. Several carbon distillation and advanced materials plants also have installed CEMS. At the Company's Zelzate plant in Belgium, the CEMS is directly connected to the management system of the local regulatory authority. The authority then shares the environmental reports with site management to update them on the status.

The Corporate Sustainability team annually collects global environmental sustainability data from all sites (including  $NO_{x'}$ ,  $SO_{x'}$ , particulate matter, volatile organic compounds and hazardous air pollutants). The data is consolidated and summarized for reporting purposes. Local environmental teams complete routine reporting (monthly, quarterly, annually) for regulatory agencies to demonstrate the Company's compliance with air emission permits.

Over the last years, Rain Carbon has decreased  $SO_x$  and  $NO_x$  emissions in absolute numbers and in relation to the amount of products produced due to its constant improvement efforts at

all sites. The majority of air emissions are related to the Company's carbon calcination activities, with nearly 90% of  $NO_x$  emissions and 97% of  $SO_x$  emissions stemming from those production processes. On average, they emit 0.83 kg of  $NO_x$  and 9.74 kg of  $SO_x$  per ton of product. Carbon distillation and advanced materials production processes have a comparably smaller footprint for air emissions. On average, they emit 0.12 kg of  $NO_x$  and 0.59 kg of  $SO_x$  per ton of product.

Social

### Addressing the Generation of Air Emissions

Rain Carbon has installed various systems to prevent the generation of non-GHG air emissions at its sites, such as fluegas desulfurization (FGD) systems, pyroscrubbers and baghouses to remove particulate matter.

FGD systems are used to minimize  $SO_x$  emissions at the Company's calcination and distillation facilities. Since its commissioning in 1998, the Company's Visakhapatnam calciner in India has consistently operated with a high-efficiency lime-based FGD system. In addition, Rain Carbon recently

commissioned a new vertical-shaft calcination facility in Atchutapuram, India that is equipped with a state-of-the-art FGD system that removes more than 99% of the plant's SO<sub>2</sub> emissions. Currently, Rain Carbon's plants are the only calciners in India with installed FGD systems operating at or above the court-mandated threshold the Indian Government implemented to reduce air pollution.

Over the past decade, the Company also expanded its commitment to environmental stewardship by incorporating dedicated FGD systems at its Chalmette and Lake Charles calciners in the United States. Furthermore, the Company has enhanced the efficiency of the existing FGD system at the Norco (US) facility.

Rain Carbon's FGD systems enable it to fully comply with the environmental operating-permit limits for  $SO_x$ ,  $NO_x$  and particulate matter. The Company's goal is to maintain 100% compliance and minimize its impact on the environment and the communities where it operates. Any process excursions or events that could impact the environment are thoroughly documented and reported to local and national regulatory agencies. Each negative impact is investigated in collaboration with the affected stakeholders. A team of environmental

professionals then assigns corrective action in agreement with operations personnel. Major negative impacts are discussed, and regulatory agencies assign mitigation steps to reduce or prevent future negative impacts. These mitigation steps are communicated to site personnel, and control measures are put in place.

Introduction

Rain Carbon has installed technical innovations at various locations in order to achieve further improvements, as follows:

At Rain Carbon's site in Hamilton (Canada), it has commissioned two new continuous online VOC monitors. in March 2024. Also, the Company has implemented an additional component to the Hamilton site's air management system: the Company's operators conduct daily checks at tank roofs using a Mini RAE VOC handheld instrument to detect emissions from venting devices, such as Pressure Vacuum Relief Valves (PVRV). This was started in Q3 2022. Also, in the fall of 2022, Rain Carbon commissioned the use of a TVA 2020 VOC monitor in Hamilton that is more accurate at lower levels of VOCs. In addition, a low NO<sub>v</sub> furnace was installed at the beginning of 2023 to lower the plant's NO<sub>v</sub> emissions.

At the Company's Zelzate site in Belgium, in September 2023, a deNO<sub>x</sub> was installed on the BTX incinerator, which reduced

 $NO_x$  emissions of that plant by 90-95%. Furthermore, a low  $NO_x$  furnace was installed in the petro-distillation unit. Overall,  $NO_x$  emissions could be cut in half from 2022 to 2023 at Zelzate.

Rain Carbon's Castrop-Rauxel site in Germany has implemented nearly dustfree BigBag filling stations for solid pitches to mitigate air contamination caused by pitch dust. Additionally, enhanced suction pumps have been installed at the naphthalene and oil filling stations to prevent diffuse air contamination at this site. A new machine (AVS 3) has been commissioned to optimize environmental impact further, providing better control over gas consumption and effectively minimizing NO<sub>x</sub> formation.

# Installed Technical Innovations

Various technical innovations such as Continuous Online VOC monitors and state-of-the-art deNO<sub>x</sub> units.

# Leakage Detection and Repair

Social

One common cause of air emissions is leakage in pipe systems or containers. In order to actively find and eliminate these emissions, a leak detection and repair (LDAR) program was implemented at the Company's carbon distillation and advanced materials plants to proactively and regularly check for fugitive losses of hazardous benzene, toluene and xylene (BTX) emissions. The program was initiated in 2010 at the Zelzate facility in Belgium, and due to its success, a similar program was rolled out at the Castrop-Rauxel (Germany) and Hamilton (Canada) facilities. An external company performs a comprehensive audit each year to identify BTX leaks. Detected leaks are then repaired as soon as possible. The LDAR project enables Rain Carbon to monitor and reduce hazardous BTX emissions at its facilities constantly and significantly contributes to minimizing its environmental impact.

At Rain Carbon's site in Hamilton (Canada), it revised its LDAR program in 2023. During the November 2023 LDAR survey, the Company increased the number of components monitored, such as threaded connections, flanges and valves, which now amounts to 2,200 and will be checked regularly.

### Collaboration for Positive Outcomes

In 2021, Rain Carbon collaborated with the Council of Scientific & Industrial Research – National Environmental Engineering Research Institute (CSIR-NEERI) in India, for an independent assessment of the positive impact of the Company's pollution-control initiatives in both the Visakhapatnam and Atchutapuram carbon calcination units in India. CSIR-NEERI acknowledged that both units use sustainable manufacturing processes that reduce environmental emissions, apart from conserving energy and bringing in economic benefits. The report also affirms that the Company's state-of-the-art FGD systems in India achieve over 98% scrubbing efficiency, positioning them among the cleanest CPC manufacturing units from an environmental standpoint. Additionally, according to CSIR-NEERI's findings, using steam generated from waste-heat recovery systems reduces process related emissions from calcination in India to zero. Consequently, Rain Carbon's CPC manufacturing in India not only achieves an overall reduction in sulfur dioxide (SO<sub>y</sub>) emissions and spent lime generation. It also significantly diminishes greenhouse gas emissions due to reduced coal consumption, while maintaining an equivalent level of power generation.

# Products





Annex

As the global impacts of consumption, such as climate change, declining biodiversity, environmental pollution, resource wastage and unfair working conditions, continue to grow, the demand for more sustainable products is increasing. Rain Carbon believes the demand for such products will be a key innovation driver for many businesses in the future, particularly in light of the evolving expectations of both its customers and downstream users. The chemical industry, in particular, has increasingly integrated products with reduced environmental footprints into its portfolio as part of discussions around the concepts of circular economy and value chains.

Rain Carbon has received an increasing number of customer requests for new products based on the customers' sustainability targets. This fits well with the Company's sustainability vision of providing essential carbon products for a sustainable transition. An environmentally-friendly product portfolio from the Company's side will enable its customers to act more responsibly at their end. This was the main driver in the Company's effort to attain ISCC PLUS certification in its resins business and its constant search for alternative sustainable raw materials. Alternative carbon sources, including renewable (bio-based and recycled) carbon, are essential to Rain Carbon's present and future innovation activities, leading to better environmental sustainability of the Company's products and applications. Additionally, the Company believes this will enhance the security of the raw materials it needs, leading to improved economic sustainability.

16%

Better rolling resistance than the standard rubber mixture

# NOVARES<sup>®</sup> resins decrease a car's energy consumption by reducing rolling and abrasion resistance in tires.

Research and development in the automotive tire industry has shown that certain additives in tire compositions can positively impact the energy consumption of cars. Rain Carbon's internal analysis has shown that adding selected NOVARES<sup>®</sup> resins to tire compounds results in 16% better rolling resistance than the standard rubber mixture. Based on internal estimates, this improved rolling resistance has the potential to save 0.82 tons of CO<sub>2</sub> emissions over the lifetime of an average family car (a mileage of 200,000 km).



Environment

Products

Carl

Corporate Sustainability Report 2023

# 4.1 Innovative Products and Processes

9 INDUSTRY. INNOVATION AND INFRASTRUCTURE

SDG 9 Industry, Innovation and Infrastructure (sub-targets 9.2, 9.4):

Introduction

We support a resilient infrastructure with products for the transportation and construction industries, such as creosote to extend the life of wood railroad ties, sealers for asphalt as well as corrosion-resistant coatings for use in marine infrastructure, ships and shipping containers.

Annex

By offering more environmentally friendly products, Rain Carbon is making a positive contribution toward global sustainability challenges, while reducing the environmental footprint of the Company, its products, and the impacts occurring during their use phase. Rain Carbon will continue to contribute by developing new products with reduced environmental footprints or by processing additional, carbon-rich materials with sustainable attributes to optimize current and future products for resource- and energy-efficient applications.

Introduction

As the Company supplies its customers with raw materials for their respective industries, its efforts to develop a more innovative and sustainable product portfolio will have an impact far beyond Rain Carbon's customers. See also the figure 'Journey of Our Carbon Materials' on the next page. The majority of Rain Carbon's product development activities are based on market or customer inputs and are performed in close contact with customers, starting from the design and development stages. This requires the active management of intellectual property rights.



#### Ambitions

- Innovate the product portfolio and manufacturing processes according to environmental sustainability criteria.
- Support the ongoing industrial transformation with products used in applications with lower environmental footprints and favorable lifecycle benefits.
- Innovate Rain Carbon's business model in selected innovative market segments.

#### Targets

- Develop resin products based on recycled or renewable monomers by 2026.
- Transition from a pure selection of aromatic industrial by-product streams for carbon-precursor production to the synthetic processing of suitable precursor raw materials by 2026.
- Develop precursor and hard carbon for sodium-ion batteries by 2028.
- Create 25% of sales revenue for the resins & modifiers business with products launched in the last five years by 2026.
- Commercialize Anhydrous Carbon Pellets (ACP) by the second half of 2024.
- Achieved
  On track
  On hold
  New

# Ambitions and Target Status

The development of new products, manufacturing processes and their technical applications further down the supply chain are all important to Rain Carbon's ambition of continuously improving and sustaining its business. By constantly enhancing its expertise and incorporating the latest research and development (R&D) results, the Company is committed to contributing to continued sustainable development. The Company's R&D efforts help differentiate itself from competitors, and its continuous improvement efforts help meet its stakeholders' expectations.

Rain Carbon's target to develop resin products based on recycled or renewable monomers by 2026 is well on track. In 2023, the Company sold the first volumes of its NOVARES® ECO product line based on ISCC PLUS-compliant materials. The initial ISCC PLUS-compliant raw material purchased was bio-circular naphtha, based on used cooking oil.

The transition from solely selecting aromatic industrial by-product streams for carbon precursor production to instead synthesizing appropriate precursor raw materials by 2026 is progressing

smoothly. A significant milestone in 2023 was the integration of pre-processing.

The resins & modifiers business aims to generate 25% of its sales revenue from products launched in the last five years by 2026. This target is advancing with 20% of the sales revenue in 2023 being generated from products launched since 2019.

Another target, to develop precursors and hard carbon for sodium-ion batteries by

2028, is also well on track. An internal R&D project targeting the development of a suitable hard carbon was started in 2023.

The target to commercialize Rain Carbon's proprietary ACP by the second half of 2024 is currently on hold due to challenging market conditions. However, Rain Carbon is persistently working in this area, and customers are testing the material.

# **NOVARES® ECO** product line

Social

First products sold



Introduction

Annex

### Driving Innovation Processes

The management team for each business unit and their sub-segments is responsible for developing its own business strategy. Product and technology innovation strategies are closely aligned with each business's strategy. The product innovation business process is now applied to all product innovation projects in the carbon distillation and advanced materials businesses. It is supported by a customized softwarebased tool that is used for the management of product innovation as well as industrial CAPEX projects. In this way, the piloting and industrialization of new products and processes is formally connected with industrial project engineering. This facilitates the required interfaces, allows knowledge exchange, and fosters collaboration across departments.

Social

A systematic project assessment based on strategic, technical, financial, commercial and sustainability criteria allows for the comparability of projects and the overall fit with major strategic directions. In addition, many of the productinnovation projects performed by Rain Carbon's R&D competence centers in Germany and Belgium were approved by national and European programs of R&D support (in the frame of the Horizon Europe EU program, the FuE BSFZ 2023 tax credit system, and the programs of the Flemish Agency for Innovation and Entrepreneurship (VLAIO)). Currently, the Company has one nationally-funded project in Belgium for the pre-processing



of petroleum-based aromatic by-product streams for carbon precursor production. In 2024, the Company will start a European R&D project in the frame of the Horizon Europe program, including the Belgian and German R&D groups of Rain Carbon, for sustainable synthetic graphite production for lithium-ion battery applications. Environment

Social

Annex

With the BSFZ seal, companies can demonstrate their innovative competence to the outside world. The seal is awarded exclusively by the Certification Body for Research Grants (BSFZ). Rain Carbon received the seal from the BSFZ as the Company conducts research and development, which is eligible and has been accepted for funding through the research allowance. The BSFZ seal is awarded for in-house R&D projects as proof of in-house R&D performance and participation in the German R&D tax support program.



In Belgium, VLAIO supports development projects that target specific activities aimed at advancing the development phase of new products. Rain Carbon secured funding for one R&D project last year through this agency, allowing the Company to display the signage to indicate its participation.

Rain Carbon has taken its first steps to set up a new Technology Innovation Center for Energy Storage Materials in 2023 to further push innovation processes. The new Innovation center will contain a pilot demonstration facility, an analytical laboratory, and a battery application laboratory. These functions should primarily support Rain Carbon in understanding the behavior of the PETRORES® and LiONCOAT® carbon precursor products in the material manufacturing processes of the Company's customers in the battery material markets. This understanding should support the development of further improved next-generation carbon precursor products and processes for the manufacture of carbonaceous anode materials for the fast-growing battery market. The center should also expand Rain Carbon's R&D footprint to North America, where a dynamically growing battery industry is established. The Company believes this fits well with its sustainability mission of providing essential carbon for a sustainable transition.

When it comes to the development of innovative and sustainable products, Rain Carbon considers three kinds of products as environmentally friendly:



environmental profile in comparison to standard traditional technology. This could include the processing of feedstocks with reduced environmental footprints.

Products and manufacturing processes that have an improved

Products that reduce emissions for customers and downstream users.



Products that contribute to sustainable downstream applications in general and function as an enabler of the sustainable industry transformation, such as anodes for aluminum production, electrodes for the steel recycling process and carbon-based materials for batteries to support electromobility and battery energy storage.





Rain Carbon monitors the success of product innovation by the annual sales revenue of products launched during the last five years. Additionally, introducing leading indicators will help steer productinnovation activities in the future. Improving the efficiency of the Company's product innovation processes, combined with its strategic R&D investments, should allow it to achieve its business growth targets and enhance the sustainability of its product portfolios.

Social

In the Company's carbon distillation and advanced materials businesses, the R&D intensity in 2023 increased in comparison to the previous year (2023: 0.56 %; 2022: 0.44 %). Apart from other factors, this is related to decreased sales revenues due to market slowdowns. The new products that were developed and launched in the last five years contributed in 2023 with 2.96 % to the total sales revenue of the carbon distillation and advanced materials businesses, compared to 3.54 % in 2022 and 1.87 % in 2021. The resins and modifiers business, which has an R&D intensity of around 1.4 % in 2023, made an important contribution to this total. The percentage of sales revenue by new products launched to the market in the last five years in the total annual sales revenue of the resins and modifiers business reached 10.9% in 2021, increased further to 21.1 % in 2022 and



# 20.0%

Sales revenue of the resins and modifiers business in 2023

was 20.0 % in 2023. This percentage of new product sales should increase further, with a minimum of 25% in 2026 for the advanced materials resins and modifiers business.

#### Assessing Product Carbon Footprints

Introduction





Product carbon footprint studies are a tool to assess the sustainability of Rain Carbon's overall product portfolio, particularly with respect to climate change. The assessments are globally standardized and have become an important point of reference for industries and global value chains.

Social

Based on information regarding the raw materials used and transport processes, for example, as well as energy consumption and emissions, the Company can model carbon footprints for its products according to ISO 14067. RCI uses the internationally recognized LCA for Experts software (formerly known as GaBi) for these assessments to provide the most accurate results to its customers.

The Company's Corporate Sustainability team has implemented the infrastructure for product carbon footprint assessments. Carbon footprint studies are increasingly applied in selecting development projects for new product lines and line extensions. Carbon footprint studies conducted in 2023 included an assessment of RCI's PA production facility in Belgium and the elaboration of its existing carbon footprint studies for its NOVARES® resins, pitch, naphthalene, creosote oil and carbon black oil products. A major renewal of the study will be conducted in 2024 as this will include significant optimization potentials implemented at the Company's sites.

In most cases, the supply of raw materials dominates the carbon footprint results, followed by in-house steam generation, which is required during Rain Carbon's processes. The data that the Company collects from these studies will help better understand the Company's impacts and prepare more effective measures to mitigate them.



Rain Carbon Sustainability Report 2023

### Product and Process Development in the Carbon Calcination Business

Introduction

In 2021, the carbon calcination business started to work on a new material, ACP. ACP is an input material in the calcining process which leads to lower  $CO_2$  and  $SO_x$  emissions during calcination, the production of more tons of product from the same quantity of raw material, and an increased lifespan of derived products, such as anodes in the electrochemical production of aluminum.

After commissioning an ACP plant at the Chalmette calcining site in the US in 2022, a major North American aluminum producer tested the first products at full industrial scale in 2023. While the results of this trial were very positive, the project has been put on hold due to current, challenging market conditions.

Another major milestone on the product side of the calcination business was the first commercial sale of CPC from the new vertical-shaft calciner in Atchutapuram (India) in 2022. This new technology for Rain Carbon produces CPC in a different calcining process relative to a rotary kiln. The technology has three primary benefits for Rain Carbon. It produces a higher bulk-density product compared to a rotary-kiln calciner, which is highly sought after by the Company's customers. It also produces more CPC per ton of GPC due to significantly lower combustion of fines during the calcination process. Finally, the CPC produced by the shaft calciner has lower  $CO_2$  and  $SO_2$  emissions per ton of CPC compared to the Company's rotary kiln product.

Social

The new calciner also uses a different and highly efficient ammonia-based  $SO_2$ scrubbing technology that is capable of removing >98% of the  $SO_x$  generated in the calcining process. The scrubber also produces a valuable ammonium sulfate by-product, which can be used as a fertilizer in agricultural applications. This project's successful completion and commercial operation represents a major product and process innovation for Rain Carbon.

Data & Performance

#### Aluminum Value Chain Study

In 2022, Rain Carbon finalized an aluminum value chain study, which included a detailed product carbon footprint analysis of the Aluminerie Alouette primary aluminum smelter in Canada.

An essential part of this study is the lower carbon footprint of the CPC supply to Alouette as a result of the waste heat recovery system at Rain Carbon's Lake Charles calciner in the US.

The results of the Company's aluminum value chain study were published in a peer-reviewed technical paper in the Journal of Metals in September 2022. The study shows that Alouette produces among the lowest carbon primary aluminum in the world, with total Scope 1,2 and 3 emissions of 3,914 kg  $CO_2e$ /ton of aluminum. Some hydroelectric-powered smelters achieve the <4 tons  $CO_2e$ / ton of aluminum target needed to qualify their product as low-carbon aluminum by including only Scope 1 and 2 emissions. For Alouette to achieve <4 tons with all cradle-to-gate emissions included is a significant achievement. This means their carbon footprint is approximately 75% lower than the global average aluminum smelter and approximately 25% lower than the average Canadian hydroelectric-powered smelter.

According to this scientific assessment, the CPC from the Company's Lake Charles site has a  $CO_2$  footprint that is 16% lower than CPC provided from a calciner without waste heat recovery and power generation. The total anode production supply chain, including green petroleum coke, coal tar, CPC and CTP production, contributes 20% to the overall carbon footprint of the Alouette smelter. Additionally, Rain Carbon provided all the modeling work for the study and took the lead in writing and publishing the paper.

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex



#### Annex

# New Products for Energy Storage

Introduction

In general, thermoplastic carbon precursors are used to produce graphitebased battery anode materials for lithium-ion batteries. These batteries are used in consumer electronics like smartphones and laptop computers and are the batteries of choice used in electric vehicles. Lithium-ion batteries will also play an essential role in battery energy storage for peak-shaving in the electric grid required for increasing renewable electricity.

Rain Carbon provides essential materials for the electrodes used in lithium-ion batteries. This aligns with its sustainability mission, as lithium ion batteries are enablers of the growing electromobility trend. The Company's PETRORES<sup>®</sup> products act as precursors for the coating and binding of battery anode materials. Conductive carbon black produced by its special carbon black oils provides conductive properties to the positive electrode. Additionally, the aluminum used as a current collector in these batteries could not be produced without Rain Carbon's products. Rain Carbon's advanced materials products, PETRORES® 150 and LiONCOAT® LM, are thermoplastic carbon precursors produced by the upcycling of industrial by-product streams to transform them into high-yield carbon. These product lines are used to manufacture carbonaceous battery anode material for lithium-ion batteries. In 2023, a lot of progress was made in product purity and the content of metal particles, positively affecting the safety of the later lithium-ion battery cells.



12V 100AH DEEP CYCLE

Annex

#### **Lithium-ion Batteries**

Introduction

Recently, the high energy density and increasing durability of modern lithium-ion batteries have become the enabler in the electrification of the transportation sector – a fast-growing market due to high customer demand and tightening regulations on CO<sub>2</sub> emissions around the world. Lithium-ion batteries are also expected to play a major role in stationary battery energy-storage applications, such as buffering of the peak power supply and consumption in the electrical grid. This is gaining increasing importance with higher reliance on intermittent renewable energy sources like solar and wind power and higher electricity demand due to electromobility. As the demand for batteries is increasing, Rain Carbon is working closely with battery material producers to expand and innovate its PETRORES<sup>®</sup> and LiONCOAT<sup>®</sup> product lines. Our PETRORES<sup>®</sup> products are specifically developed precursors used to create the amorphous carbon layer – several tens of nanometers in thickness – that act as a coating for the graphite and silicon-containing powders used in all lithium-ion batteries. These carbon layers are essential for battery-cell performance as they positively influence a battery's durability, safety and energy capacity, as well as its charging and discharging speed.



The development efforts for the thermoplastic carbon precursors for battery anode-material production continued in 2023. As a part of this effort, Rain Carbon participates in a project within the European Research & Innovation program. This is being conducted by a consortium of 12 companies and academic centers representing all tiers of the value chain, from the battery raw materials to the enduse of the battery and battery recycling. The project will target the sustainable production of synthetic graphite battery anode materials for lithium-ion batteries and will be kicked off in 2024. Rain Carbon will contribute through its Competence Center for Precursors & Distillates in Zelzate (Belgium) as well as its Competence Center for Carbon Technology in Castrop-Rauxel (Germany). The project proposal was awarded by a grant from the European Commission.

Sodium-ion batteries are considered a possible alternative to lithium-ion batteries for applications that permit lower cell

capacities per battery volume and weight than lithium-ion batteries. Sodium-ion batteries could also reduce the demand for rare lithium used in lithium-ion batteries. Additionally, present sodium-ion battery cells contain non-graphitizable amorphous carbon (so-called hard carbon) as the electrochemically active material in the negative electrodes. Rain Carbon's products could function as raw materials in manufacturing hard carbon. The Company's R&D team is already engaged in the development of such products and had taken the first steps in 2023.

# Development of New NOVARES® Products

Rain Carbon's product innovation strategy includes the development of resins with a further minimized hazard profile. In this spirit, the Company launched NOVARES® TM 120 in 2023, which is a new, water-white, odor-free, non-toxic pure monomer resin product with a softening point of 120°C for the adhesives market. Additionally, the NOVARES® MP50/LM liquid hydrocarbon resin product family has been developed to minimise hazard potential and as an alternative to the existing NOVARES® LS and LA liquid resin product families used mainly in the coatings market. Also, the Company developed the NOVARES® Pure 2090 hydrogenated hydrocarbon resin as a colorless, odorless, and non-toxic resin product which was successfully introduced in the cosmetic industry, where it is mainly applied in depilatories. Through their minimized hazard profile, the introduction of these products steadily decreases the environmental footprint of Rain Carbon's product portfolio.

Another important driver for Rain Carbon's product innovation is its processibility in downstream applications. In this spirit, the Company has developed a low viscosity NOVARES® TL 10 resin binding material to /

follow the trends in coating applications towards higher solid and ultra-high solid formulations. NOVARES® TR 140 and TR 140M are resins developed as an alternative to the traditional NOVARES® TT 140M for the bitumen industry due to their better availability and specified compatibility. Both products can be used in bitumen formulations, which can increase the durability of pavement and adhesion on the road surface, and can improve the wetting of the pigments contained in the bitumen formulation.

# NOVARES® MP50/LM

New environmentally friendly liquid hydrocarbon resin for coating and adhesive applications

Social

### Switch from Coalto Petro-Based Raw Materials

The transition from coal-tar-based to upcycled petroleum-based aromatic industrial by-product streams in 2022 was a high priority for Rain Carbon and its customers in the rubber, coatings, and adhesives industries. The Company switched, for example, from coal-tarbased indene to petroleum-based indene in order to produce the NOVARES® YT-C resin family. Customers will benefit from the economic and environmental sustainability linked to this raw material switch, plus its enhanced future supply security. The new products will also contribute to a lower carbon footprint of up to 18% in the downstream products.

Annex

#### **Sustainable Transition**

Shortages of traditionally used materials require the identification of alternative aromatic raw material streams for the Company's carbon distillation processes and the manufacture of thermoplastic carbon precursors. The identification of alternatives represents a substantial part of Rain Carbon's R&D initiatives.

The declining availability of coal tar, which was a traditional carbon source for centuries, is a strong motivator in the Company's search for alternative aromatic raw material streams. The Company knows it will be critical to consider new by-product streams, and raw materials that previously could not be processed in the manufacture of its products, into suitable raw materials through advanced thermal or chemical treatments.

At the same time, the demand for the Company's products is expected to further increase, driven by the need for carbon anodes in aluminum production, graphite electrodes in steel production, and carbon-based electrode materials for battery cells. Due to the disruptive nature of battery applications that require carbon electrode materials, the demand for carbon raw materials and finished products is expected to grow rapidly.

The first results of Rain Carbon's R&D efforts have been promising, with its ability to integrate an increasing amount of petroleumbased raw material streams into its production processes. The introduction of hybrid binding materials containing significant amounts of petroleum-based constituents for aluminum and steel electrode manufacture is an important step for supply security. Today's battery-grade PETRORES® and LiONCOAT® precursor products already rely on petroleum-based sources. Furthermore, a process that converts carbon feedstocks into aromatic raw materials for their production processes is currently being scaled to pilot production.

# Process Innovations in 2023

In line with Rain Carbon's sustainability mission, the Company is setting the standard by continuously improving its processes in terms of sustainability — resource efficiency, reduced environmental emissions and footprints — and thus setting new standards of production. One example is the recycling of xylene used as a process solvent in the production of NOVARES® TM pure monomer resin, which was developed in 2023 and is likely to be introduced in the industrial production process of these resins in the first quarter of 2024. The recycled xylene will be reused in the process, improving the economics of the pure monomer resin manufacturing process as well as its sustainability. The recent implementation of feed cooling in the Company's manufacturing process of NOVARES® TM 85 AS, a water-white and odor-free pure monomer resin, has led to several benefits. Not only has it enhanced product quality and batch consistency but also increased process yields by 5%. Furthermore, feed cooling has resulted in fewer out-of-spec product batches during the start-up phase of each process campaign, thereby reducing production process waste while improving economics.

In addition, savings in wastewater volumes achieved by making adjustments to the manufacturing process of the NOVARES® LA products have increased the sustainability of this liquid resin product family used in the coatings industry.

Also, the recycling of phenol, which could be introduced in the manufacture of NOVARES® LS products, helps to avoid phenol-containing waste during the production of these products, improving their ecological and economic sustainability.

Another area of sustainability enhancement was the substantial yield improvement achieved in the manufacturing process of the petroleumbased NOVARES® Y-TC 10 indene-based hydrocarbon resin, while maintaining the same raw materials use and energy expenditure. This improvement has enhanced the economics and sustainability of the product, mainly applied as an additive in the rubber industry.

Annex

4.2 Circularity



SDG 12 Responsible Consumption and Production (sub-targets 12.2, 12.4, 12.5, 12.6):

Our business model is based on resource efficiency as we transform by-products from other industries and utilize them to create new materials while preventing them from being used as secondary fuels. Responsible production is further expressed through our activities to reduce environmental emissions, such as our widespread use of fluegas desulfurization, continuous emission monitoring systems and leak-detection and repair projects.

and a state of the second

Annex

In general Rain Carbon's business model supports circularity on two levels. Firstly, we upcycle by-products - which otherwise would be combusted as secondary fuels to value-added materials. Secondly, by doing so Rain Carbon produces materials that enable circular business models - in particular the aluminium value chain as well as electrochemical steel recycling.

Rain Carbon's expertise in processing carbon materials will strengthen business opportunities due to the increased focus by customers and other stakeholders on recycling and the circular economy concept. On one hand, a transition to circular feedstocks of by-products from other industrial processes could reduce the use of conventional resources and the emissions produced during the combustion of by-products such as coal tar and GPC.

On the other hand, the Company's current business model strongly depends on the by-products of oil refining and steel production. As the availability of coal tar and GPC feedstocks from those industries continues to decline due to disruptive changes in both of them, the Company has already begun to strengthen its proven, industry-leading raw material innovation capabilities. This will allow Rain Carbon to keep pace with its changing external environment to identify and develop alternative carbon-rich materials and

### Fuels-to-Materials - Rain Carbon's Upcycling Contributes to a Circular Economy



feedstocks. This will also require close collaboration in the future with other industries such as the waste management industry, and possibly new business models.

# Ambition and Target Status

Rain Carbon strives for high levels of resource efficiency in its processes to avoid the unnecessary consumption of finite resources. The Company's upcycling activities help prevent waste and additional emissions in upstream and downstream industries. Through the upcycling of otherwise combusted byproducts from the steel and petrochemical industries, the Company prolongs the lifetime of carbon-containing materials and produces carbon materials with added value that are found in the aluminum and battery supply chains. In line with the Company's Fuels-to-Materials strategy, it converts those raw materials into value-added carbon products that enable higher circularity levels in downstream applications, such as aluminum production or steel recycling. Rain Carbon sees opportunities to expand its upcycling activities in the future by broadening its raw material base and supporting customers with their circularity ambitions.

Annex

Rain Carbon's target to switch from a pure selection of aromatic industrial by-product streams for carbon precursor production to the synthetic processing of suitable precursor raw materials by 2026, is well on track. A milestone in 2023 was the integration of preprocessing of the raw materials, making them more suitable for the Company's production processes.

Introduction

A new target has been set this year: Rain Carbon will continuously expand the sales of products with a reduced environmental footprint, which has been initiated with its first sales of ISCC PLUS-compliant products in 2023.

### Business Segments are Steering Raw Material-Related Decisions

The management makes strategic raw material-related decisions of each business based on availability and desired strategic positioning. The feedstocks and feedstock availability topics are discussed during weekly business meetings.

The responsibility for raw material-related decisions lies with the management of each business and the respective operations or site management team supported by the R&D department. Within the carbon distillation and



#### Ambitions

- Expand Rain Carbon's upcycling of new industrial by-products.
- Foster Rain Carbon's position as a carbon link to enable a circular economy.

#### Targets

- Intensify screening for alternative by-products and identify at least one alternative feedstock every second year.
- Expand the sales of products continuously with a reduced environmental footprint by launching at least one new ISCC PLUS-compliant product per year.
- Achieved On track On hold New

advanced materials businesses, the R&D Competence Center for Precursors & Distillates in Zelzate (Belgium), which has technical expertise in carbon- and petroleum-based raw material streams, is responsible for identifying new and alternative feedstocks for the global business segment and recognizing the measures needed to integrate them in the industrial processes. The R&D team supports local operations management in the introduction of the new feedstocks to the production processes. The group is responsible for broadening Rain Carbon's raw materials platform, conducting laboratory-scale assessments of new feedstocks and pre-processing feedstocks to make them suitable for use in the Company's plants. These new feedstocks can be alternative, conventional, renewable or recycled materials. An example of such an ongoing evaluation is the use of biomass feedstock alternatives in Rain Carbon's production processes. For example, while the production of CPC completely relies on raw materials that are by-products of the petroleum-refining industry, the carbon segment continues to evaluate biomass feedstock alternatives, which currently do not meet customers' performance criteria.



#### Annex

## Striving for More Circularity

Introduction

In line with Rain Carbon's Fuels-to-Materials strategy, the Company's businesses constantly look for alternative feedstocks as well as processes to transform certain streams into suitable feedstocks. Progress in identifying and evaluating them is discussed during business meetings, which also cover the eventual implementation of industrial processes in the framework of processdevelopment projects. Since 2021, the Company's businesses have been assessing their share of raw materials that are by-products and which are being upcycled during calcination, distillation and other processes as an indicator of Rain Carbon's alignment with circular principles.

Rain Carbon intends to build a broader and more flexible raw material platform of sustainable streams to ensure the security of supply. This strategic approach supports customers in reducing carbon emissions and in enhancing overall sustainability in their supply chains.

During 2023, Rain Carbon first focused on identifying additional feedstocks from the petrochemical industry as well as from renewable and recycled sources. Based on this the Company now concentrates on the development of processes that allow for the chemical conversion of these new feedstocks into suitable raw materials.

One example is the production of hybrid pitches made from a combination of coal tar and petroleum-based raw materials. In 2023, the Company produced a large-scale sample of a specific hybrid pitch containing a significant amount of petrochemical constituents. This will be used as a new, more sustainable binding material for industrial tests at a graphite electrode manufacturer. The extension of coal tar pitch with petroleum-based pitch (hybrid pitch) is a way to increase availability and security of supply without deteriorating the properties of the final product. These examples of upcycling of industrial by-products by Rain Carbon contribute to the circular economy.

Another process which was developed for a family of petrochemical feedstocks at the lab-scale is now being scaled up to 'pilot-scale' quantities at Rain Carbon's Zelzate plant in Belgium. This will provide additional insights into the industrialization of these alternative feedstocks. The Company continuously evaluates and processes different types of feedstocks at its R&D labs to find new, circular solutions for the production processes.



#### Annex

#### Advanced Materials' ISCC PLUS Initiative

Introduction

NOVARES® TN 120 ECO, the Company's first ISCC PLUS-compliant hydrocarbon resin product, was sold under the NOVARES® ECO label to the adhesives market in 2023.

Rain Carbon's advanced materials business has developed additional indicators to monitor the number of products made from sustainable feedstocks from 2022 onward. Sustainable feedstocks refer to all types of sustainable carbon, such as bio-based streams or those derived from recycling.

This initiative includes certification under the International Sustainability and Carbon Certification (ISCC) PLUS scheme. ISCC is a recognized organization that certifies bio-based or recycled feedstocks across the entire value chain, from source to end-product. Using the concept of mass balancing, amounts of sustainable raw materials are added at the beginning of the value chain and mathematically allocated to the respective amounts of products. Mass balancing and allocation ensure that an equivalent amount of sustainable raw materials is present in the value chain. Overall, the chemical industry is becoming more sustainable with increasing proportions of ISCC PLUS-certified material.

Since 2023, Rain Carbon's Duisburg (Germany) site has had an ISCC PLUS certification and offers certain 100% ISCC PLUScompliant Rain Carbon products based on mass allocation. The first ISCC PLUS-compliant materials were sold in December 2023, and preparations were initiated to certify the Hydrogenated Hydrocarbon Resins (HHCR) plant at the Company's Castrop-Rauxel (Germany) site as well. The Company believes this initiative is an important next step in transparently increasing the sustainability and circularity levels of Rain Carbon's value chains.



### Alternative Feedstocks for Carbon Distillation and Advanced Materials

Rain Carbon's R&D teams are well on track in their investigations into the availability of monomers from sustainable sources that could be used as building blocks for the synthesis of hydrocarbon resins. These sustainable sources can either be recycled plastics or renewable/ bio-based materials. The investigation will create the knowledge base required to develop new resin products, if justified by economical and ecological aspects, as well as ensuring the availability of these raw materials. As the availability of these monomers gradually increases, Rain Carbon should be able to expand its portfolio of sustainable industrial resin products and satisfy the growing customer demand for them. These studies have identified the first resin materials based on a new chemistry with promising resin properties and will now be further developed in the key resin applications.

In the carbon distillation and advanced materials business, the primary raw material feedstock is coal tar, which is a by-product of the transition of coal into

metallurgical coke in steel production. The business also relies on petroleum tar and other aromatic raw material feedstocks, which are by-products of refineries and other petrochemical industries. Another raw material for the Company's industrial processes is crude benzene, a by-product from the coking process of coal. The share of raw materials that are industrial by-products used by the Company's carbon distillation and advanced materials businesses is more than 98% in total.

Rain Carbon is convinced that a selection of purely aromatic raw material streams is insufficient to satisfy future demand. In addition, the new ability to transform raw materials that, up until now, could not be processed by the Company's thermal or chemical treatment processes into suitable raw materials, will be crucial. The identification and potential conversion of new aromatic raw material streams for the Company's carbon distillation processes and the manufacture of thermoplastic carbon precursors used for coating, binding and impregnation materials based on carbon are essential for Rain Carbon's future business and, therefore, represent a substantial part of Rain Carbon's R&D initiatives.

### Alternative Feedstocks for Carbon Calcination

The carbon calcination business has similarly developed laboratory and pilot-scale tests to assess and evaluate alternative feedstocks for the suitability of its processes. Rain Carbon extensively uses its sophisticated pilot anode preparation and test facility at the R&D Competence Center for Carbon Technology in Castrop-Rauxel (Germany). The work in this area requires a collaborative effort between the Company's calcination and distillation businesses, since CPC aggregate fractions are prepared in the Company's US lab, and then pilot anodes are prepared and tested in Germany. In 2023, the Company prepared and tested pilot anodes with its proprietary ACP produced in a largescale production campaign in October 2023 using shaft CPC produced at Rain Carbon's new Achutapuram (India) calciner. In the calcination business, 100% of Rain Carbon's raw materials are

already industrial by-products: primarily GPC. This includes delayed-sponge and shot coke, as well as fluid coke, all of which are by-products of petroleum refineries. Moreover, the Company started investigating biomass-derived carbons as alternative/supplemental feedstocks in 2023. This work is still at an early stage but will be continued in 2024.

Social

# 100%

of Rain Carbon's raw materials - in the calcination business - are already industrial by-products







Sustainability Strategy

Environment

Annex

Sustainability is not only about environmental impact. It also includes a social dimension. Through Rain Carbon's business activities, it has a responsibility toward people along the value chain. The Company is committed to preventing unfair working conditions in its value chains and to ensuring the health and safety of its product users, just as it prioritizes the well-being of its employees.

Given the involvement of hazardous materials and various chemical substances in Rain Carbon's area of business, safeguarding the health and safety of individuals across its value chain is its paramount concern. The Company is committed to conducting its operations responsibly, primarily focusing on the safety of its employees and other people involved in its operations. As the Company's employees are its most important stakeholders and the key to its success, it is keen to positively impact its employees by creating a sustainable talent ecosystem. This means treating them fairly, fostering their personal development and skill-building, and providing opportunities for growth within the Company.

### Transformation Toward Digital Solutions

Rain Carbon is currently undergoing an internal transformation process as it increasingly implements digital solutions. Digitalization processes play a pivotal role in transforming traditional operations into modern and efficient practices in the Company's industry. Rain Carbon has been undertaking a wide variety of efforts to stay at the forefront of this type of development across many areas. For example, the Company has implemented SAP-SuccessFactors as its key tool for managing and digitizing its Human Resources (HR) processes. Additionally, Rain Carbon has implemented a digital solution to manage all of its countless safety data sheets across the globe.

## **Data Management**

Social

Employees at Rain Carbon's local sites are responsible for handling local HR and safety-related data. On a corporate level, this data is consolidated by the RCI Global Human Resources and RCI Global Safety, Health & Environment (SH&E) departments. The Corporate Sustainability team is tasked with collecting and consolidating this global data in line with the Global Reporting Initiative (GRI) standards and indicators. forming the basis for the data presented in this report. In 2023, Rain Carbon conducted its first external validation of HR and safety data. The 2023 data presented in this report underwent external validation, as stated in the independent assurance statement located in the Annex on pages 123 and 124.



Annex

# **Commitment to Local Communities**

Rain Carbon's engagement also strongly focuses on Corporate Social Responsibility (CSR) and enhancing the quality of life in the communities where it operates.

### Corporate Citizenship in Germany – RÜTGERS Foundation

The RÜTGERS Foundation, which was established in 1999, aims to make science, technology and IT lessons in schools experience-oriented and fascinating for school-age children. It supports school classes and project teams in Germany and Europe to enable pupils to have positive experiences with science and research. In almost 25 years of project work, the foundation has supported 500+ school projects, reaching more than 16,000 young people in schools. Over 1.9 Mn euros in project funds have been distributed during this period.

The Foundation strengthens schools and universities in the region by promoting scientific networks and supporting the exchange between science and schools. The Foundation supports young people with scholarships to transition from school to university and improve their career opportunities. Close cooperation with teachers has led to long-term partnerships with schools, which have helped to focus and improve science lessons. Numerous school projects have been successful in science competitions for pupils and have received awards. The Foundation helps improve young people's future prospects and strengthen the labor market for skilled workers.

In 2023 the Foundation funded 30 school projects with € 75,000 contributing to sustainable educational opportunities. Additionally, two students at Bochum University of Applied Sciences were awarded scholarships in the subject of sustainable development.

### Corporate Citizenship in India – Pragnya Priya Foundation

The Pragnya Priya Foundation in India, the Company's sister organization, operates several hospitals in remote regions of India where no other medical facilities are available within a 20-mile radius. These medical centers are equipped with test laboratories and other specialized equipment, and each year the hospitals provide treatment to upwards of 70,000 patients. In addition, the Company believes that education is a crucial factor in enabling individuals to reach their full potential. Through the Pragnya Priya Foundation, the Company operates three schools in rural India.

### Corporate Citizenship in the US

In North America, Rain Carbon's commitment to Corporate Social Responsibility extends beyond financial contributions. The Company's employees actively engage in hands-on initiatives, including stocking local food bank shelves, participating in projects with 'Habitat for Humanity' and 'The United Way', and supporting local schools with various events.

Whether building homes for low-income families or assisting with holiday events, Rain Carbon's employees donate their time and resources to act as catalysts for positive change in their communities. Their generous financial and volunteer work contributions to local 'United Way' chapters further support diverse initiatives, where Rain Carbon employees actively benefit those in need. ility Strategy

Social

Annex

# 5.1 Safe Operations & Employee Health

Introduction



#### SDG 3 Good Health and Well-Being (sub-target 3.9):

Safety and health are of central importance to us during manufacturing and the downstream use of our products. In 2018, we launched our Quest for Zero initiative to help us become an incident-free company. We also promote a healthy and active lifestyle within Rain Carbon via regular health check-ups for employees as well as occupational health- and safety-management systems, including continuousimprovement activities in the workplace focused on safety, such as toolbox talks.

Corporate Sustainability Report 2023

Rain Carbon's health & safety management system helps to create a safe workplace and prevent employee work-related injuries and incidents. By ensuring the safe operation of its plants, the Company protects the health and safety of employees, visitors and neighboring communities. The Company

ffe für die

implements safety controls through the hierarchy of its controls method. This method follows the belief that hazard elimination is a top priority and then works down to using proper Personal Protective Equipment (PPE) to protect employees and visitors against hazards. Furthermore, this method is not limited to incident investigation but also occurs during site audit evaluations to implement the best corrective actions for employee and process safety.



Social

#### Safe Operations & Employee Health

#### Ambitions

- Become an incident-free organization by implementing the 'Quest for Zero' initiative.
- Increase leaders' involvement in health & safety topics and initiatives.
- Promote a healthy lifestyle while protecting the well-being of employees.

#### Targets

GRI: 3-3

- Development and implementation of in-house program: 'see it, fix it, report it' (SFR) by 2024.
- Continuous implementation of the Life Saving Rules (9 in total) by 2025.
- Develop a globally standardized Safety & Health management system (to initiate by 2025).
- Have each leader conduct a minimum 6 Safety, Health & Environmental Management Walkthroughs (SMWs) per year by 2024.

Achieved
 On track
 On hold
 New

# Ambition and Target Status

Rain Carbon's highest priority is the health and safety of its employees, contractors, visitors and customers, as well as plant and product safety. Due to the nature of the materials the Company works with, it is aware of its high level of responsibility and so its RCI Global SH&E team has implemented a comprehensive Safety and Health Management System globally. It is Rain Carbon's goal to prevent and eliminate any injuries, occupational illnesses, and unsafe practices in its workplaces. Therefore, the Company's highest priority is to protect the health and safety of everyone who is a part of its operations, lives in the communities where it operates or uses its products. Rain Carbon's commitment to meet stringent local, regional, national and global standards positively impacts the safety of the people working at its plants.

The Company's target is to develop and implement an in-house program called 'see it, fix it, report it' (SFR) by 2024. It is progressing well with this initiative, which is scheduled to be completed by the end of 2024 as planned.

Rain Carbon's second target, the implementation of the Life Saving Rules (LSR) (9 in total), will shift the target deadline from 2024 to 2025 due to a higher workload than expected in implementing the rules in 2023. The Company expects 2-3 new LSR directives to be implemented in 2024. The first of these is 'Working at Heights, Dropped Objects' which, once announced, will immediately focus on training, site procedures, site inspections and follow-up corrective actions resulting from audits.

The development of the globallystandardized Safety & Health Management System by 2025 is on hold and will be postponed to a later point in time due to the difficult market environment.

The goal of minimum 6 Safety, Health & Environmental Management Walkthroughs (SMWs) per leader per year by 2024 was already achieved in 2023 and will be targeted again for 2024. As this can be considered an established system now, Rain Carbon will not include this as a target in its sustainability report in the future.

# Six Safety, Health & Environmental Management Walkthroughs (SMWs)

Per leader per year established since 2023

# Health and Safety Management to Ensure a Safe Workplace

Social

At the organizational level, Rain Carbon has implemented a hierarchy of global and local responsibilities. Site management and their local operations' Safety, Health and Environmental colleagues are accountable for ensuring workplace safety and technical compliance at each site.

They are also tasked with implementing and upholding compliance with the Global SH&E Policy. The Global SH&E team, in turn, supports the local site operations SH&E teams, keeping them updated on current health and safety developments, including changing regulatory requirements. Quarterly, joint health and safety meetings are conducted, involving Global SH&E representatives, local site management, and site personnel to discuss SH&E in detail. This detailed discussion addresses past SH&E performance, any recent federal and company-level changes, and upcoming happenings that could impact SH&E. Additionally, monthly meetings are conducted with Global SH&E, site management and Rain Carbon's corporate management.

# US OSHA 29 CFR requirements implemented

At all of the Company's global sites

# **ISO 45001**

Implemented at Germany, Belgium, Canada and India (Visakhapatnam plant)

At Rain Carbon, every employee is responsible for supporting its workplace safety initiatives and ensuring that they are in compliance with all safety-related matters. This focus includes reporting incidents, accident prevention and maintaining and/or repairing equipment so it meets safety standards and helps ensure employee protection.

In addition to adhering to local and regional requirements, all of the Company's global sites have implemented the key, US Occupational Safety and Health Administration (OSHA) 29 CFR (Code of Federal Regulations) requirements, such as incident reporting, to remain consistent across Rain Carbon's Global SH&E function. The Company's sites in Germany, Belgium, Environment

Annex

Canada and India (Visakhapatnam plant) have also incorporated a certified ISO 45001 system that covers all employees and workers working at these locations.

At the site level, management performs regular SMWs and has a tracking system for reporting unsafe actions and unsafe conditions. Once an incident occurs, an incident investigation is immediately conducted by a local site SH&E professional. Depending on the severity of the incident, it is either captured in the tracking system or further discussed in a Lessons-Learned Action Team meeting. A final Lessons-Learned Report summarizes the accident, its root cause, measures taken and lessons learned. The report is then made available to all Rain Carbon sites.

To measure Rain Carbon's performance in these areas, it has established performance indicators globally as well as at the site level. Each site's indicators are reported monthly in a performance indicator system, which is then communicated to all global sites. If necessary, follow-up meetings are held to improve performance. This performance review allows the Company to track positive and negative developments. Inline with its commitment to continuous improvement, the Company looks for optimization potential and sets internal site-specific targets each year. Rain Carbon has increased the focus on recordable injuries and first-aid cases to prevent fatalities and other serious incidents further.

Compared to 2022, Rain Carbon's annual first-aid injury rate was constant in 2023 with 4.0. For 2023, the Company's annual total recordable incident rate (TRIR) was less than 0.3. Compared to the previous year, the TRIR increased slightly, mainly due to a lower total number of working hours, which influenced this final rate. The first-aid injury rate stayed the same as last year. As in many manufacturing companies, the most common causes of accidents are slips, trips and falls. However, Rain Carbon's KPIs demonstrate that, upon returning to a new normal after the Covid-19 pandemic, its healthand-safety management system is still effective and supports its ambition to become an incident-free Company. RCI continues to adjust to changes resulting from market fluctuations.







Social



Environment

Social

#### Annex

# Regular Training Activities for Employees, Contractors and Visitors

All of Rain Carbon's employees take part in regular health-and-safety training sessions in accordance with national and local standards. The Company has had its 'Quest for Zero' initiative in place since 2018, which supports its aim to become an incident-free organization. Since the inception of this program, Rain Carbon has established organization-wide training and awareness programs. The initiative aims to develop a culture where safety becomes ingrained as a behavior across all facets of employees' lives. Rain Carbon's consistently low first-aid injury rate indicates progress toward achieving this aim.

In addition, the Company has implemented a contractor/visitororientation training program for its visitors. Every external person must adhere to the same requirements as the Company's employees. These sessions educate the visitors about the Company's safety requirements and familiarize them with potential safety hazards at its sites. Moreover, Rain Carbon requires contractors, vendors and visitors to provide safety information and maintain and show proof of federal safety and health compliance before entering a Rain Carbon site.

# 'Quest for Zero' Initiative

In place since 2018



### **Providing Guidance**

Rain Carbon maintains several policies concerning employee and plant safety. Through the Company's Global SH&E Policy (see chapter 3. Environment), it is committed to eliminating unsafe practices and establishing systematic approaches to fulfill its commitments and achieve compliance. Alongside the Global SH&E Policy, Rain Carbon has localized SH&E policies tailored to address sitespecific conditions. Additionally, Rain Carbon enforces a Global Process-Safety Management Policy and implements lifesaving rules and other initiatives based on real-time data and scenarios from its working conditions to provide employees with guidance for fostering a safe working environment.

A global incident-reporting guideline supports the communication, investigation, and tracking of incidents and injuries to completion. This framework supports root-cause analysis and establishes corrective actions to prevent dangerous situations from recurring.

All policies are made available to Rain Carbon's employees. After a policy, directive, or guideline is revised, additional training is performed to inform employees about the changes. The

training sessions are either conducted via the Company's online learningmanagement system or onsite by a SH&E professional. The Company encourages its employees to actively participate in discussions on health and safety to inform them of processes and guidelines. Rain Carbon promotes a culture in which employees are encouraged to take action to avoid and report any unsafe incidents or conditions. In the United States, for example, employees are rewarded when reporting any unsafe actions or conditions through an incentive program. Rain Carbon additionally protects its employees from internal or external retaliation. as stated in the OSHA whistleblower standard.

## Rain Carbon's Life-Saving Rules and 'Safety-First 2.0'

Social

Rain Carbon has developed the 'Safety-First 2.0' initiative, which began in May 2022, to understand where it stands with regard to occupational safety and what issues it must focus on to improve the most. The 'Safety-First 2.0' initiative implemented detailed practices for increased involvement of the management at the site level. It also included an increased number of meetings with the Company's contractors and visitors to discuss SH&E topics, management-of-change improvements and increased SH&E training at all of the Company's sites. These included annual hazard identification training and global post-incident refresher training.

As part of Rain Carbon's 'Safety-First 2.0' initiative, the Global SH&E team fully implemented SH&E Management Walkthroughs (SMWs) and post-incident refreshers. Additionally, it introduced (i) the EHS Insight software tool to better track hazard reporting and data sharing, (ii) improved software to track key items discussed during the Company's semiannual SH&E meetings, and (iii) a card system for use during the SMWs. In 2023, and continuing into 2024, the Company implemented an improved hazard reporting tool through its EHS Insight software to help report hazards efficiently and track site-specific hazards at a global level.

Annex

#### Rain Carbon's Life-Saving Rules

In order to maintain our high level of safety performance, Global SH&E initiated the Rain Carbon Life-Saving Rules (LSR) campaign in January 2021. The campaign includes nine LSRs that we view as the most important for employee safety and that are being implemented over a four-year period. The Global SH&E team has minimum directives for implementation at each site. Each site has been given four months to meet these minimum requirements related to each rule and train all employees on the new procedures and to purchase any equipment, as needed, to begin implementation. For the first four rules (Control of Hazardous Energy, Work Authorization, Confined Space and First Break), directives, training, sitewalkthroughs and local guidelines were fully developed and integrated. 'Mobile Equipment and Safe Driving' was fully implemented in 2023, 'Working at Heights and Dropped Objects' is expected to be released during the first quarter of 2024.

### President's Safety Excellence Award

Production facilities that have gone one year or more without recordable incidents are rewarded with the Rain Carbon President's Safety Excellence Award. In 2023, seven Rain Carbon production facilities were recognized for their outstanding safety performance. Compared to last year, a total of three fewer factories won the award. This is due to a recordable incident having occurred at sites that did not have a recordable the previous year. Rain Carbon's Global SH&E department is also holding lessons-learned action team meetings to raise awareness and share respective incident information to all sites globally. Furthermore, despite these individual cases, the Company is still well on the way to achieving its ambition of becoming an incident-free company.







Number of consecutive years without a recordable incident

Facility
Another achievement from 2023 was that Rain Carbon's Visakhapatnam plant has been recognized as the Best Safety Performer for the year by the Confederation of Indian Industry (CII) Andhra Pradesh, under their Industrial Safety Excellence Awards 2023 in the manufacturing category. The Safety Excellence Award recognizes good safety performance and encourages industries to promote programs for accident prevention and safety. The award adheres to a transparent and rigorous assessment process that includes various levels of audit, scrutiny and verification, from evaluating questionnaires and claims to applying safety tools.

### **Benefits for Employees**

Rain Carbon offers site-specific employee health benefits, including insurance coverage, annual medical checkups and related benefits. For example, at the Company's US sites, it offers incentives for employees to undergo an annual wellness exam. Additionally, employees and their family dependents have free access to an Employee Assistant Program, which offers legal and financial consultations as well as up to six mental health sessions. Similarly, at the Company's German sites, benefits include bike leasing, food subsidies, company pensions and accident insurance.

### **Taking Product Stewardship Seriously**

Manufacturing, importing, supplying and handling chemicals involves economic, environmental and personal risks for Rain Carbon, its employees and third parties.

Social

Different legislation, whether international, national, or regional, is established to manage risks associated with trading hazardous products, and the Company is committed to adhering to these regulations. The Global Hazardous Substance Management (HSM) team is responsible for the conceptual planning and for coordinating the worldwide implementation of regulatory requirements concerning hazard information and the safe handling of Rain Carbon's products. Chemical regulatory compliance and hazard communication are jointly managed by the Global Regulatory Compliance and Global HSM groups, both of which are organized and centrally managed within the greater Global Regulatory Affairs and Sustainability department.

Additionally, Rain Carbon has established the function of Product Stewards. tasked with facilitating the efficient and timely exchange of information

among departments, with a particular focus on Regulatory Affairs, Product & Technology, Commercial and Research & Development. The Company provides safety data sheets (SDSs) and product labels that adhere to all pertinent laws and regulations, ensuring compliance for its customers and other downstream users. The main tools for hazard communication are being standardized through the United Nations Globally Harmonized System of Classification and Labelling of Chemicals. They are gradually being incorporated into safety data sheets and product labels across various jurisdictions and countries globally. These documents contain crucial information for the safety of workers, consumers and the environment. Rain Carbon considers national, regional and internal legal requirements for chemicals in its target markets, including manufacturing, transport and storage of its products.

Rain Carbon provides its workers and employees with access to SDSs in relation to substances or mixtures they use or may be exposed to in their work. These SDSs and product labels are updated in accordance with revisions to chemical legislation. Additionally, SDSs provide relevant information to create further required documents for workplace safety and the transportation of dangerous goods. The Global HSM



GRI: 3-3, 403-6, 403-7

Annex

group continuously provides information on components and hazardous products to local workplace safety, environmental experts and authorities, and external service providers like global emergency hotlines, in case of an incident with Rain Carbon's products.

As the global regulatory landscape evolves, Rain Carbon consistently enhances its management systems to adapt. The Company has implemented a monitoring system to track regulatory trends, upcoming new chemical regulations and standards. The European Union, known for its advanced chemical safety regulations, mandates compliance with the Regulation on the Registration, Evaluation and Authorization of Chemicals (REACH). This regulation demands proper registration of substances and the provision of accurate safety information.

The Global Regulatory Affairs and Sustainability teams are collaborating to implement a global monitoring system. This system tracks regulatory trends, emerging chemical regulations and compliance standards, such as the implementation of REACH-like schemes in Korea, Turkey and the UK.

Rain Carbon is fully committed to the Cefic initiative, which aims to improve the quality of safety-relevant data necessary for REACH compliance. As part of this commitment, the Company annually updates several registration dossiers for its products, proactively. In 2023, the organization's Rain Carbon Germany GmbH, Rain Carbon BV and Rain Carbon Poland subsidiaries collectively updated 16% of all active registration dossiers

In another initiative, the Global HSM team has been implementing the digital infrastructure to continuously integrate data and adopt a centralized approach for Rain Carbon's hazard communication.

SAP EHS and 3 ERC provide Rain Carbon with comprehensive and reliable SDS authoring, management and shipping processes that include national and international regulatory substance data, SDS and label standard templates, expert rules, property trees and relevant phrases for chemical compliance and safety in more than 110 countries in 48 languages worldwide, from raw materials to finished products. The SDS and labels are disclosed on Rain Carbon's Global SharePoint Intranet for internal use.

SAP EHS software is embedded into the SAP business processes of Rain Carbon, to ensure that the customers receive automatically the up-to-date SDS before the date of the good delivery and subsequently to any relevant revision of the SDS.

SAP EHS and 3 ERC help the Company address a large number of chemical legal requirements and respective changes, plus automate classification processes and streamline global information collection within Rain Carbon and along the Company's supply chain.

# 16%

Of all active registration dossiers updated in 2023

Environment

Social

De Vos Wim

Annex

# 5.2 Employee Empowerment and Continuity



SDG 8 Decent Work and Economic Growth (sub-target 8.4):

We take our responsibility of providing safe and ethical working conditions across our global footprint seriously. We have family-friendly working-time models such as mobile-working policies. Our people at different sites participate in works councils, collective agreements on remuneration, and multiple programs and activities focusing on workplace safety. Environment

Annex

Throughout 2023, the material topic 'organizational resilience' was revised to 'talent and capability development.' This adjustment was made to better align with Rain Carbon's commitment to fostering a sustainable talent ecosystem, in accordance with its sustainability mission. Furthermore, it is more in line with the strategic direction of the Company and the Global Human Resource team.

With approximately 1,550 employees spanning six countries, Rain Carbon is an important global employer in the fields of carbon calcination/distillation and advanced materials. In today's highly competitive global labor market, the Company competes for talent by positioning itself as an employer of choice, driven by its reputation as an inclusive employer offering a highly engaging work environment. However, in today's labor market, employees also seek employers with a mission that contributes positively to the world. The Company believes that its sustainability record is critical to becoming an employer of choice within its segment.

Rain Carbon's leadership and corporate culture promotes employee satisfaction and commitment, leading to low staff turnover. The Company's renowned high tenure and low turnover create a virtuous cycle, attracting potential future employees and investors alike. Employee well-being, work-life balance, corporate benefits, and personal and professional growth opportunities are key drivers contributing to the organization's ongoing strength.

With a competitive labor market forecasted for the long term, it is crucial for Rain Carbon to prioritize not only talent retention but also the incubation and development of its existing workforce, ensuring they acquire the capabilities necessary for future roles. The Company offers career development opportunities to foster internal talent growth. Enhancing the knowledge and skills of its workers retains legacy knowledge, builds robust talent pipelines and smooths the pathways to its strategic objectives.



Social

#### **Employee Empowerment and Continuity**

#### Ambitions

- Employee Engagement: Create highly engaging working environments for Rain Carbon's employees so that the Company can retain the best talent and attract top talent within its communities.
- Human Resources (HR) Modernization: Continuously review and update HR policies and systems to allow the Company to promote a positive employee experience. This involves providing services/benefits that are best aligned with local employees' needs, digitalizing processes, and reducing administrative burdens.

#### Targets

- Develop an employee development strategy across the entire employee life cycle throughout 2024.
- Implement a comprehensive talent philosophy (including the revision of leadership training, succession planning, and transforming Rain Carbon's recruiting processes) that enables both the local and global aspects of its business until 2026.
- By 2030, 100% of the employees (for whom it is foreseen) will go through an annual performance review.
- Digitize and simplify the HR technology ecosystem through the implementation of the SAP-SuccessFactors platform by the end of 2024.
- Expand recruiting reach by leveraging the appropriate social media strategies to connect with candidates across global and generational boundaries by the end of 2025.
- Implement systematic benefit reviews during contract renewals to align investment with employee needs until 2027.

Achieved On track On hold New

# Ambition and Target Status

Mere provision of a competitive compensation and benefits package is no longer sufficient in today's labor market. Top talent in the marketplace now seeks employers who not only meet their baseline expectations in compensation and benefits but also contribute to societal progress through innovative products and services, treat all individuals fairly, and provide opportunities for rapid personal and professional growth. Acknowledging this shift, Rain Carbon revised its ambitions and targets this year. The Company realized that its previous focus was too narrow, emphasizing aspects within its short-term grasp. However, the Company did not abandon its prior commitments. Instead, it expanded its focus and integrated them into a broader perspective. By doing so, Rain Carbon ensured to include all aspects of becoming a leading employer in its field. For the Company, achieving its future-fit company sustainability mission and its ambition of a sustainable talent ecosystem involves focusing on two key areas: creating a highly engaging work environment and modernizing its HR practices.

To create a highly engaging work environment, the Company aims to

establish employee development strategies for the entire employee lifecycle, addressing specific needs and implementing a comprehensive talent philosophy. This includes revising current processes and conducting annual performance reviews for all its employees.

In line with its goal of modernized HR Management, the Company focuses on digitalization and simplification of its HR technology system, expanding recruiting reach through social media strategies and optimizing benefits through systemic benefit reviews.

Rain Carbon is making substantial progress toward its target of conducting annual performance reviews for all eligible employees by 2030. In 2023, 67% of employees slated for a 'performance and career development review' had already undergone this process.

### Employee Engagement

Effective HR management plays a pivotal role in shaping the dynamics of modern organizations, particularly in fostering employee engagement. Rain Carbon's internal approach is described and implemented via various HR policies and principles that are applied worldwide, such as the International Training & Development Policy, the International Recruiting Policy and the International Compensation & Benefits Policy. Additionally, the Company has incorporated the following leadership principles to support its leaders, which apply to all supervisors globally.

Social

#### Rain Carbon Leadership Principles



Serve as role models for maintaining standards of occupational safety, ethics and integrity.



Engage in dialog with your teams and encourage cooperation across Rain Carbon.



Show faith in the abilities and judgment of your team.



Support and develop your team to meet both the current and future needs of the organization.



Communicate constructively and foster a collegial work environment.



Look toward the future and encourage a willingness to embrace change.

Rain Carbon Sustainability Report 2023

For Rain Carbon to create a highly engaging work environment, it is important to provide development support to its workforce throughout the entire employee lifecycle. The Company needs to understand what is needed in each phase so it has a clear understanding of when and how it should act locally or globally about talent. Conducting an employee satisfaction and engagement survey was an important step in this direction. Lastly, Rain Carbon must foster transparency within its teams by openly communicating their performance status

and outlining the necessary steps to help the Company accomplish its objectives.

In 2023, Rain Carbon engaged in succession planning by identifying top talent through its digitized performance review process. The Company then provided regional and global leadership development programs to challenge this talent and grow their leadership capabilities. Likewise, Rain Carbon is dedicated to improving digital skills across its entire employee base through initiatives such as mandatory cybersecurity training, upgrading platforms to the cloud and ongoing modernization of plant systems through capital investments.

# Training and Development

Social

Rain Carbon's International Training & Development Policy applies to all employees and is accessible via the Company's Global SharePoint Intranet. The policy outlines the Company's approach to training and developing its employees. The Company aims to promote a culture of recognition across all its sites and has established a globally standardized performance evaluation system, which includes annual feedback sessions on performance and further employee development. In 2023, 67% of Rain Carbon's employees scheduled for a 'performance and career development review' had already undergone this process, marking a 4% increase from the previous year. Rain Carbon's training and development measures are based on the results of these performance evaluation discussions. Since 2021, the Company has consistently increased the average number of training hours per employee, with each employee receiving roughly 22 hours of training on average in 2023.



### **HR Modernization**

Social

Establishing an engaging environment becomes challenging when Rain Carbon's HR practices are not aligned with and not capable of meeting the expectations of today's global labor force. In certain instances, substantial investments are required to address legacy technical deficiencies within the Company's HR area. In other cases, it is essential for the Company to challenge itself to adopt innovative approaches in engaging the workforce.

In addition to local HR management systems, the Company utilizes SAP-SuccessFactors as its company-wide learning management system. This system standardizes and digitizes the administration, documentation, tracking and reporting of employee learning, development and training programs. In 2023, the Company went one step further and committed to implementing SAP-SuccessFactors as its primary system across the majority of its HR processes. This best-in-class platform will enhance Rain Carbon's ability to manage the employee experience. The Company anticipates fully implementing this foundational technology by the end of 2024 and fully optimizing the technology by 2025. This investment consolidates most of the Company's global HR

functions on to a single platform, driving efficiencies within HR and improving the employee experience when interacting with HR.

Rain Carbon also needs the ability to reach and connect with its future and potential employees, wherever they may be, including on social media. SAP-SuccessFactors provides an initial foundation for recruiting marketing capabilities, but that is just the beginning. To enhance its outreach, Rain Carbon must educate its leaders on effectively utilizing social media to communicate its message and opportunities in areas beyond the reach of the recruiting marketing platform. This necessitates a substantial cultural shift, and although the Company is already tackling these challenges, it anticipates the momentum to steadily increase. Ultimately, the Company intends to ensure that its investment in employees has the highest possible impact. This involves evaluating the usage and experience of Rain Carbon's global benefits. Additionally, the Company does not want to make assumptions about what employees require; instead, it aims to delve deep to truly understand the expectations in each region to optimize the use of its investments in employees' health, wellbeing and engagement. While this is an ambitious goal, achieving it will have a profound impact when executed correctly.



# 5.3 Labor and Human Rights



SDG 8 Decent Work and Economic Growth (sub-target 8.4):

Introduction

Rain Carbon is committed to business integrity and respect for labor and human rights, which is reflected in the Company's Code of Business Conduct & Ethics and in the support of the Ten Principles of the United Nations Global Compact.

By adhering to the Code of Business Conduct and incorporating the UN Global Compact's principles into business strategy, Rain Carbon aims to not only comply with different local regulations, but also to ensure fair working conditions for its employees and workers in its value chain. Environment

Data & Performance

Annex

Companies are increasingly requested not only to take responsibility for their own operations but also to exercise due diligence in their supply chain. Customers, investors and authorities all expect Rain Carbon to comply with all applicable regulations. As a company with global supply chains, there is a fundamental risk of possible human rights violations, for example, in refineries, steel production, or the exploration of raw materials. However, since Rain Carbon primarily uses secondary materials, these processes are not directly part of the supply chain. Nonetheless, it is crucial to prevent indirect effects of the Company's business activities, as human rights violations are unacceptable to Rain Carbon.

Introduction

Labor and human rights hold equal importance in the Company's own operations. With the majority of its plants located in Europe and North America, these issues are widely covered through national legislation. Compliance with these regulations remains paramount for Rain Carbon as an employer.

### Ambition

Rain Carbon supports the Ten Principles of the United Nations Global Compact on environment, human rights, labor, and anti-corruption. The Company is committed to incorporating these principles into its business strategy, culture and day-to-day operations. Moreover, the Company aims to instill sustainable procurement standards across its business units and departments over the next two years.

### Inclusion of Labor and Human Rights in the Code of Conduct

Social

Rain Carbon's commitment to business integrity and respect for labor and human rights is reflected in its Code of Business Conduct & Ethics. The Company adheres to the UN's Universal Declaration of Human Rights and the International Labor Organization's fundamental conventions concerning rights at work (i.e., numbers 29, 87, 98, 100, 105, 111, 138 and 182). Every employee is expected to adhere to the Code as the foundation for carrying

out their job duties, upholding the highest ethical standards. Rain Carbon also rejects any form of child labor or forced labor in its business practices and interactions with suppliers and service providers.

Additionally, violations of Rain Carbon's commitments, including its dedication to labor and human rights, can be reported following the processes described in its 'Escalation & Reporting Policy.' All employees are requested to acknowledge the Company's Code of Conduct through a digital training course in the HR's SAP-SuccessFactors Learning Management System. The Company regularly monitors the completion of all employee training courses. With respect to the Code of Conduct, 94% of our employees have so far conducted the corresponding training. Sustainability Strategy

Environment

Social

# Diversity and Equal Rights

Rain Carbon covers diversity and equal rights aspects, such as equal-employment opportunities and anti-harassment policies, in its global company Code of Business Conduct & Ethics.

The Global Human Resources team oversees training related to global policies, like the Company's business conduct rules, and international training and development. Local HR teams in each country are responsible for providing specific training sessions such as anti-harassment training. Equal rights are managed and ensured in all of Rain Carbon's HR processes, including recruitment, hiring, personnel development and employee retention.

There have not been any significant changes in the diversity structure of the Company's governance bodies and workforce in 2023 or in recent years. As a company in the chemical industry with the majority of its employees working in plant operations, Rain Carbon has traditionally had a higher proportion of male employees due to a larger share of male job applicants in this sector. Following the high standards of Rain Carbon's HR policies, the Company's approach is to hire and develop the best candidates for each job, providing equal opportunities without discrimination.

Rain Carbon's recruitment and hiring process, defined in the Rain Carbon Group International Recruiting Policy, applies to all countries to ensure high global standards. The Company's global HR organization is responsible for implementing this policy. Job advertisements are published in a gender-neutral manner, and an interview evaluation summary form guarantees that the Company recruits the most qualified person for each job based on the defined requirements and skillsets of the candidates. All HR department employees are trained and experienced in equal rights to ensure that the recruitment and hiring process is free from any discrimination.

# Rain Carbon's Code of Business Conduct and Ethics states that:

'Rain Carbon provides equal employment opportunities, in conformance with all applicable laws and regulations, to all employees and applicants based on qualification and merit, as well as the business needs of Rain Carbon. Rain Carbon administers its personnel policies, programs and practices in a nondiscriminatory manner in all aspects of the employment relationship, including recruitment, hiring, work assignments, promotion, termination and wage and salary administration'. [...] 'It is the policy of Rain Carbon to prohibit any form of harassment in any Rain Carbon workplace. Forms of harassment include, but are not limited to, unwelcome verbal or physical advances and sexually, racially or otherwise derogatory or discriminatory materials, statements or remarks.'



### Fair Wages, Freedom of Association and Collective Bargaining Agreements

The Rain Carbon International Compensation & Benefits Policy describes the Company's approach to attracting, motivating and retaining employees. The Company's global HR organization is responsible for implementing this policy, in which equal rights issues are monitored at a local level and are then communicated and consolidated upwards through the Global HR organization. Equal pay is ensured through the Company's competency and performance-based compensation systems. Performance evaluations are conducted by a trained superior and are based on standardized criteria, such as level of knowledge, problem-solving competency and accountability related to the position. Rain Carbon regularly reviews job profiles to determine salary ranges, using benchmark data via Korn Ferry from HAY, a company specializing in job evaluation systems. When determining annual salary-increase budgets, the Company considers factors like inflation, projected salary increases and benchmark HAY data. For employees not covered by collective bargaining

agreements, Rain Carbon offers marketand competency-based salaries that align with wages in the local labor market.

To ensure equal opportunities for career advancement, Rain Carbon promotes the most qualified employee based on defined job requirements and the candidate's skills. Moreover, all open positions are published internally.

Minimum wages are paid at all of the Company's sites. In the United States, Germany, Belgium, and Canada, remuneration for 50% of the Company's employees is covered by collective bargaining agreements.

Rain Carbon's employees can exercise their rights to freedom of association and collective bargaining at all its locations. Membership in labor unions and similar organizations does not result in any disadvantages at Rain Carbon. The Company supports the involvement of its European employees in works council activities by providing time for this purpose and enabling works council meetings and trade union gatherings.

### Labor and Human Rights in Our Value Chain

Social

To fulfill due diligence obligations in the supply chain, companies should set up an appropriate management system. Along these lines, Rain Carbon strives to establish the necessary processes to better identify potential supply chain risks in the future, enabling prompt remedial action. In pursuit of a more standardized approach, the Company is committed to aligning supplier assessments with both national and global regulations. This ensures a uniform evaluation process that addresses environmental impact, safety considerations, and regulatory compliance across all legal entities.

In 2023, the Company piloted a Supplier Code of Conduct for part of its US business, outlining ethical and sustainable business practices. In Germany, selected suppliers for the resins and modifiers business undergo regular performance assessments, which include evaluating the implementation of environmental or energy management systems. Rain Carbon's terms and conditions clearly specify certain requirements for suppliers, such as the payment of minimum wages. This not only contributes to ethical business practices but also ensures social sustainability within the supply chain.

Carbon Sustainability Report 2023

# Sustainability Governance and Responsible Business Conduct

# 6.1 Governance Structure

Rain Carbon is committed to upholding good corporate governance and ensuring accountability across all levels of the organization. In line with this commitment, the Company has established an organizational structure that ensures oversight by its highest governance body, the Rain Carbon Inc. Board of Directors. This Board includes the Chief Executive Officer (CEO) and President of Rain Carbon and two Non-Executive/Independent Directors, one of whom serves as the Chair. The Board has been appointed to represent Rain Carbon's shareholders and supervise the Company's business management.

A set of governance guidelines describes the framework for organizing, operating and carrying out tasks for the Board. It also sets expectations for the performance of duties by the Board of Directors.

The Board of Directors and its committees are nominated and appointed by Rain Carbon's ultimate parent/holding company, in accordance with criteria set in the Corporate-Governance Guidelines. These criteria include requirements like expertise and skills necessary for the position, as well as the importance of diversity in viewpoints, backgrounds, experience and other demographic characteristics. The Corporate-Governance Guidelines also cover matters related to Board and Executive compensation. They define the frequency and criteria for reviewing Board remuneration and the process for determining CEO compensation. Currently, performance management, including Board compensation, is not linked to sustainability outcomes.

Rain Carbon's Code of Business Conduct & Ethics mandates that employees and Board members disclose any conflict of interest. This includes cross-board memberships, cross-shareholdings with suppliers and other stakeholders, the existence of controlling shareholders, related parties, their relationships, transactions and outstanding balances. Required behavior is also described in Rain Carbon's Code of Business Conduct & Ethics.

### Sustainability Governance

The Corporate Sustainability team is part of the Global Regulatory Affairs & Sustainability department and is responsible for coordinating and aligning sustainability activities on both a global and local scale.

Social

In 2020, Rain Carbon established a Sustainability Steering Committee (SSC). During 2023, the SSC broadened its scope from solely being a Rain Carbon Inc. Sustainability Steering Committee to now encompass the sustainability initiatives and activities of other entities under Rain Carbon's parent company, Rain Industries Limited (RIL), including Rain Cements Limited. While the SSC is overseen by the Board of Directors of RIL, the Rain Carbon Inc. Board of Directors will still be deeply involved in Rain Carbon Inc.-specific sustainability topics. This SSC's purpose is to ensure cohesive and systemic global management of the development and execution of Rain Carbon's sustainability strategy. It approves the overall corporate direction and messaging, and it defines and monitors the Company's sustainability strategy, roadmap and targets. The SSC also holds responsibility for reviewing and authorizing Rain Carbon's sustainability reporting program and selecting material topics.

The Sustainability Core Team (SCT) supports the SSC. This cross-divisional and cross-regional team is responsible for driving the implementation of sustainability-related decisions and initiatives. The SCT's tasks include developing proposals for the sustainability strategy, defining the resulting roadmap and concepts and providing the necessary tools for implementing sustainability activities. An essential role of the SCT is to facilitate connections between key collaborators across the organization and the sustainability community to coordinate the implementation of approved sustainability initiatives and performance measures.



The SSC and SCT meet together on a quarterly basis to share updates on ongoing projects and activities, as well as to decide on proposed tools and concepts for implementing sustainability initiatives. When relevant or necessary, sustainability topics are included on the agenda for quarterly meetings between the RCI Board of Directors and Rain Carbon's Executive Management team. These meetings serve to enhance the Board's understanding of sustainability-related developments within the Company, ensuring awareness of any

Social

significant impacts on the environment, economy and people, so that highlevel recommendations can be made. Additionally, the Board is kept informed about and involved in important strategic decisions and milestones concerning Rain Carbon's sustainability reporting. The Board of Directors endorses existing processes and policies aimed at measuring and minimizing Rain Carbon's negative environmental and social impacts.



#### Annex

# 6.2 Commitment to Business Ethics and Compliance

Rain Carbon strives to continuously minimize the negative impacts, and maximize the positive impacts, of its business operations to advance sustainable development. Therefore, the Company conducts its business in accordance with the universal principles of human rights, labor, environmental, and anti-corruption standards outlined in the ILO Declaration on Fundamental Principles and Rights at Work. These principles guide the Company's internal Code of Business Conduct & Ethics, Bain Carbon's understanding and expectations regarding ethical and compliant business conduct are described in the Code. The Company expects every director, officer, and employee to demonstrate personal integrity, comply with laws and regulations, and live up to its strong ethical principles.

Introduction

To ensure all employees are aware of the updated Code of Business Conduct & Ethics, they are required to confirm their understanding of the Code through Rain Carbon's learning management system. As of 2023, 94% of the Company's employees completed this Code of Business Conduct & Ethics training digitally via the HR department's SAP-SuccessFactors Learning Management System (LMS) platform. Rain Carbon Code of Business Conduct & Ethics

The policy of Rain Carbon is to comply with all laws, rules and regulations applicable to its business. However, even where an applicable law may be permissive, Rain Personnel are expected to act with the highest level of integrity.

94%

Total share of employees trained on Code of Conduct per end of 2023\*/\*\*

\*Not adjusted for employees joining and leaving during the years 2022 and 2023.

\*\*Indian employees are excluded from this statistic as the Code of Conduct training in India is not yet conducted via the digital, online LMS platform; The digital LMS platform will be rolled out in India during 2024.



#### **Business Ethics and Governance**

#### Ambitions

Rain Carbon is committed to upholding good corporate governance standards and ensuring accountability across all levels of the organization.

#### Targets

• Ensure that all employees have read and understood the Code of Business Conduct & Ethics by the end of 2024, as well as implement processes to regularly refresh respective trainings.

Achieved On track On hold New



Introduction

Annex

Rain Carbon belongs to various national and international industry associations, including:

Social

#### **Enhancing Transparency through External Standards and Initiatives**



Rain Carbon's distillation and advanced materials businesses in Canada, Belgium and Germany have been awarded the gold medals in the EcoVadis Sustainability Rating, ranking higher than 95% of the rated companies. The calcination business in the United States has received a silver medal.



Rain Carbon Germany GmbH has disclosed through CDP's 2022 Climate Change questionnaire and reached the Awareness (C) level, illustrating the Company's ambition to assess, analyze and improve its environmental impact

Rain Carbon supports transparency and compliance risk mitigation along supply chains and thus Rain Carbon Germany GmbH has gone through the Integrity-Next self-assessment to transparently communicate its efforts to customers.



Rain Carbon actively supports the UN Global Compact, a voluntary initiative based on company commitments to implement universal sustainability principles and to advance UN goals such as the Sustainable Development Goals (SDGs).

Following the precautionary principle, Rain Carbon is focused on managing its business by aiming to prevent environmental incidents, control emissions and minimize waste. To safeguard human health, the Company is committed to identifying and evaluating health risks associated with its operations that could potentially impact employees, contractors, or the public. Rain Carbon remains dedicated to implementing appropriate programs and measures to manage these potential risks. The Company's Anti-Bribery & Anti-Corruption Policy promotes adherence to its Code of Business Conduct & Ethics, along with compliance with local, regional, and global laws and regulations. Through its Escalation & Reporting Policy, the Company has established standards for processes and grievance mechanisms pertaining to Rain Carbon's Code of Business Conduct & Ethics and other Company policies, as well as applicable laws and regulations. In 2023, there were no confirmed incidents of corruption, therefore, no actions were needed to be taken. Environment

Annex

All Rain Carbon policies receive approval from its President and apply to Rain Carbon Inc. and all of its subsidiaries. New employees are informed about the Company's policies during the onboarding process, and all employees are notified of changes via email. If necessary, employees can seek advice from their local HR department or the Global Legal department. Employees can express concerns to their supervisor, to the Global Legal department and/or to the HR department, depending on the issue. In addition to these avenues of communication on the Company's policies, which are detailed in the Company's Code of Business Conduct & Ethics, Rain Carbon is additionally developing a separate Whistleblower Policy, expected to be implemented in 2024. These guidelines are accessible to all employees via the Global SharePoint Intranet. Furthermore, the Company's suppliers must comply with all applicable laws and regulations as outlined in their agreements.



Social

We manage our business by aiming to prevent environmental incidents controlling emission and minimizing wastes.

וחה

**RAIN CARBON INC.** 

68

₹

We act resourcefully, reliably and responsibly.

We comply with laws and regulations and live up to our strong ethical principles.

We are committed to identifying and evaluating health risks related to our operations.

We expect every person at Rain Carbon to demonstrate personal integrity.

**89** GRI: 2-23, 2-24, 2-25, 2-26, 3-3

Rain Carbon Sustainability Report 2023

#### Annex

# 6.3 Cybersecurity

Introduction

In 2023, the entire group under Rain Industries Limited (RIL), including Rain Carbon, undertook several steps to realign cybersecurity priorities with the various lines of business. The Global IT department implemented a global, digital email phishing and training platform to evaluate employees' ability to detect fraudulent emails and to train those who failed the simulations.

The IT team regularly hosts online webinars discussing current cybersecurity topics to help keep its global employees safe, both at work and at home. The Company rolled out comprehensive Information Security Policies worldwide

and initiated the development of **Operational Technology Security** Policies, which specifically relate to plant operations control systems. Additionally, the legacy antivirus platform was replaced with an extensive, managed solution from CrowdStrike. Together with the managed network security platform, this enables continuous monitoring of digital platforms 24/7.

# **Global**, **Digital** Email Phishing and Training **Platform**

Implemented in 2023

Annex

# 6.4 Stakeholder Engagement

Rain Carbon considers stakeholder engagement to be an ongoing process. The Company identifies its stakeholders based on factors like impact, influence, interest, legitimacy, urgency and diverse perspectives. These criteria enable the Company to identify the stakeholders most important to its business and facilitate meaningful engagement with them.

Rain Carbon has identified the following stakeholder groups and their respective needs:

#### **Investors/Shareholders**

The support of our investors and shareholders is crucial for continuous access to capital, the ability to make progress on our strategies and to reach our objectives.

#### **Employees**

Our people, their ideas and their passion are the key forces driving our company forward. Their dedicated approach and innovative mindset bring our ambitions to life.

#### **Local Communities**

A good connection with our local communities is key to promoting prosperity and understanding each other's needs.

#### Customers

As a customer-centric company, our ability to meet rapidly evolving customer needs is a priority. Through exchanges with our customers, we can identify their needs and adapt and develop our products accordingly.

#### Government/ Regulatory Bodies

As a responsible corporate citizen, we believe that a symbiotic relationship with government and regulatory bodies can bring value to both sides.

#### **Vendors/Suppliers**

Maintaining a strong relationship with vendors and suppliers of raw materials and indirect services is key to uninterrupted operations and delivery of products.

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance

Rain Carbon employs various methods to stay connected with its stakeholders (Refer to the detailed list in the Annex on page 108. Depending on the stakeholder group, the Company utilizes different engagement platforms, including vendor meetings, supplier gatherings, customer visits and meetings, customer feedback channels, charity engagement and employee engagement initiatives. Stakeholder engagement holds significant importance for the Company. It facilitates an ongoing and balanced exchange of perspectives, fostering alignment on mutual interests, especially concerning sustainability matters within Rain Carbon's areas of activity.

Rain Carbon is an active member of multiple industry associations. This enables the Company to engage in discussions and debates on key issues with peer companies, customers and other member organizations. Consequently, industry groups serve as important platforms for the Company to interact with stakeholders on a range of topics, including sustainability.

92 GRI: 2-28, 2-29

# Rain Carbon belongs to various national and international industry associations, including:

European Chemical Industry Council (Cefic) – Europe

Verband der Chemischen Industrie e.V. (VCI) – Germany

essenscia – Belgium

🛛 Creosote Council III – North America

Pavement Coatings Technology Council (PCTC) – US and Canada

Railway Tie Association (RTA) – US

American Coke and Coal Chemicals Institute (ACCCI) – North America

Industrial Energy Consumers of America (IECA) – US

Aluminum Stewardship Initiative (ASI) – Global

Concawe – Europe

Annex

# Data and Performance





Annex

Data is included for Rain Carbon's following sites, with exemptions mentioned in the respective footnotes.

© Carbon distillation & advanced materials (5 sites): Castrop-Rauxel, Duisburg, Hamilton, Kedzierzyn-Kozle and Zelzate.

© Carbon calcination (8 sites): Chalmette, Gramercy, Lake Charles, Norco, Purvis, Robinson, Visakhapatnam and Atchutapuram.

Data from Rain Carbon's production site in Atchutapuram that started operations in 2022 has been included in the 2023 data set for the first time. Data from the Company's operation site at Cherepovets has been excluded for all years, since that legal entity was shifted in 2023 from sitting under the Rain Carbon Inc. corporate umbrella to sitting under Rain Industries Limited.

In 2023, Rain Carbon conducted an extensive review of its data reporting process, after which some numbers needed to be changed in comparison to what was reported in last year's report.

# Environment

Energy

GRI	Indicator	Unit	2023	2022	2021 -
GRI 302-1	Total Energy Input	TJ	5,171	5,774 <sup>i</sup>	6,429 "
GRI 302-1	Primary Energy Input *	TJ	3,554	4,160	4,588 "
	Secondary Energy Input**	TJ	1,617	1,615	1,841 <sup>ii</sup>
GRI 302-1	Total Energy Consumption***	TJ	1,787	1,882	2,076
GRI 302-3	Energy Intensity****	TJ/Metric Ton Product	0.001	0.001 <sup>i</sup>	0.001"
	Energy Generated from Waste-Heat Recovery****	TJ	3,288	3,795	4,228

Data from Rain Carbon's production site in Atchutapuram that started operations in 2022 is included in the 2023 data for the first time.

\*The value includes primary energy for stationary combustion only (processes as well as production of energy), excluding mobile combustion (all vehicles (trains, trucks, and fork lifts, among others) used on sites and for production). \*\* Including electricity, self-generated renewable energy and self-generated energy from waste heat.

\*\*\* 'Primary energy input' plus 'secondary input (excluding WHR)' subtraction of 'energy sold'.

\*\*\*\* Calculated for energy consumption, not energy input.

\*\*\*\*\*Based on electricity and steam

generation from different waste heat-recovery systems in Chalmette, Lake Charles, Norco, Visakhapatnam, Atchutapuram, Castrop-Rauxel, Duisburg, Hamilton, Zelzate, Kurnool and Suryapet. i This value changed compared to last year after a review of the data reporting process.

ii This value changed compared to last year after a review of the data reporting process and due to a change of scope.

Annex



### **Greenhouse Gas Emissions**

GRI	Indicator	Unit	2023	2022	2021
305-1	Total GHG (Scope 1+2) GHG Emission*	Metric Tons CO <sub>2</sub> -equivalent	1,196,495	1,197,912 <sup>+</sup>	1,330,940 "
	Direct (Scope 1) GHG Emissions	Metric Tons CO <sub>2</sub> -equivalent	1,142,569	1,155,876 <sup>+</sup>	1,287,037 "
305-2	Indirect (Scope 2) GHG Emissions ***	Metric Tons CO <sub>2</sub> -equivalent	53,926	42,036	43,903 "
305-4	Total GHG Intensity (Scope 1+2)	Metric Tons CO <sub>2</sub> -equivalent/ Metric Ton Product	0.5121	0.4930	0.4846
	GHG Emissions Avoided through Waste-Heat Recovery****	Metric Tons CO <sub>2</sub> -equivalent	309,108	348,660	424,780 <sup>ii</sup>

Data from Rain Carbon's production site in Atchutapuram that started operations during 2022 is for the first time included in the 2023 data.

\*Includes  $\rm CO_{2'}$   $\rm CH_4$  and  $\rm N_2O$  emissions from all sites.

\*\*Includes emissions from fuel combustion, the calcination process and waste gas combustion for all sites where this is applicable. (Exemption: Emissions from waste gas combustion at Duisburg and process emissions at Castrop-Rauxel, Hamilton and Kedzierzyn-Kozle are not included). \*\*\*GHG emissions from the purchased electricity are calculated utilizing location-based emission factors in mt  $CO_2$ -equivalent per kWh, except for the Company's Indian operations, where the emission factor is only available in t  $CO_2$  per kWh.

\*\*\*\* Based on electricity and steam generation in Castrop-Rauxel, Chalmette, Duisburg, Hamilton, Lake Charles, Norco, Visakhapatnam and Zelzate. Avoided emissions are calculated based on the emissions of the energy source that would otherwise be used to supply the amount of energy if Rain Carbon's waste-heat recovery system were not in place. In the case of electricity production, the Company uses the emission factor of the local power grid, and in the case of sold steam, it uses the emission factor of the plant that would have generated the steam in the steam network. i This value changed compared to last year after a review of the data reporting process and emission factors.

ii This value changed compared to last year after a review of the data reporting process and emission factors and a change of scope.

Annex



### **Other Air Emissions**

GRI	Indicator	Unit	2023	2022	2021
305-7	Absolute Emissions of Nitrogen Oxides (NO <sub>x</sub> )*	Metric Tons	926	989	1096
	Emissions Intensity of Nitrogen Oxides (NO <sub>x</sub> )*	Kg/Metric Ton product	0.55	0.59	0.66 <sup>+</sup>
	Absolute Emissions of Sulfur Oxides (SO <sub>x</sub> )**	Metric Tons	12,989	13,125	15,226
	Emissions Intensity of Sulfur Oxides (SO <sub>x</sub> )**	Kg/Metric Ton Product	6.6	6.6	7.1 <sup>†</sup>
	Absolute Emissions of Volatile Organic Compounds (VOC)***	Metric Tons	229	238	249
	Emissions Intensity of Volatile Organic Compounds (VOC)***	Kg/Metric Ton Product	0,20	0,14	0,15
	Absolute Emissions of Hazardous Air Pollutants (HAP)****	Metric Tons	140	162	142
	Emissions Intensity of Hazardous Air Pollutants (HAP)****	Kg/Metric Ton Product	0,12	0,10	0,08
	Absolute Emissions of Particulate Matter (PM)*****	Metric Tons	759	847 <sup>i</sup>	852
	Emissions Intensity of Particulate Matter (PM)*****	Kg/Metric Ton Product	0,48	0,61	0,40

Data from Rain Carbon's production site in Atchutapuram that started operations in 2022 is for the first time included in the 2023 data.

\*Data is available for all applicable sites, except Castrop-Rauxel, Kedzierzyn-Kozle and Visakhapatnam.

\*\*Data is available for all applicable sites, except Castrop-Rauxel and Kedzierzyn-Kozle.

\*\*\*Data is available for all applicable sites, except Castrop-Rauxel, Duisburg, Kedzierzyn-Kozle, Zelzate, Visakhapatnam and Atchutapuram. \*\*\*\*Data is available for all applicable sites, except Castrop-Rauxel, Zelzate and Visakhapatnam.

\*\*\*\*\*Data is available for all applicable sites, except Castrop-Rauxel, Zelzate and Kedzierzyn-Kozle. PM10 emissions only, as this covers PM2.5.

i This value changed compared to last year after a review of the data reporting process.

ii This value changed compared to last year after a review of the data reporting process and a change of scope.

Contents
----------

Data & Performance

V ()

### Waste

GRI	Indicator	Unit	2023	2022	2021
306-3	Total Waste Generated	Metric Tons	100,528	109,232 <sup>i</sup>	133,034
	Hazardous Waste*	Metric Tons	29,181	49,728	29,569
	Non-Hazardous Waste	Metric Tons	71,347	59,504 <sup>†</sup>	103,465
306-4	Waste Diverted from Disposal (Hazardous waste)	Metric Tons	12,813	15,762	10,007
	Waste Diverted from Disposal (Non- Hazardous waste)	Metric Tons	63,776	48,521	42,325
	Preparation for Reuse	Metric Tons	-	/	,
	Recycling	Metric Tons	65,106	/	,
	Other Recovery Operations	Metric Tons	2,456	/	,
306-5	Waste Directed to Disposal (Hazardous waste)	Metric Tons	16,368	33,966	19,562
	Waste Directed to Disposal (Non- Hazardous waste)	Metric Tons	7,571	10,983	61,139
	Incineration (Hazardous + Non-Hazardous)	Metric Tons	11,051	/	/
	Landfilling (Hazardous + Non-Hazardous)	Metric Tons	7,166	/	/
	Other (Hazardous + Non-Hazardous)	Metric Tons	5,722	/	

Data from our production site in Atchutapuram that started operations during 2022, is for the first time included in the 2023 data.

\* No hazardous waste occurred at Lake Charles, Purvis, Robinson and Visakhapatnam.

<sup>i</sup> This value changed compared to last year after review of data reporting process.

Contents	
Contents	

Annex

 $\rangle$  w

### Water

_	GRI	Indicator	Unit	2023	2022	2021	$\vdash$
	303-3	Water Withdrawal***	Cubic Meters	60,35,199	6,289,261 i	71,39,165	1
	303-3	Water Withdrawal from all areas with water stress***	Cubic Meters	5,84,177	/	/	
	303-4	Water Discharge***	Cubic Meters	60,82,848	49,46,716	68,62,747	
	303-3	Water Discharge from all areas with water stress***	Cubic Meters	4,16,073	/	/	

Data from Rain Carbon's production site in Atchutapuram that started operations in 2022 is for the first time included in the 2023 data.

\*Water withdrawal includes water sourced from surface waterbodies (both fresh and saltwater), groundwater aquifers or third-party suppliers. However, the discharge also encompasses stormwater and rainwater. As a result, calculating water consumption by subtracting discharge from withdrawal doesn't accurately represent Rain Carbon's operations.

\*\*Excluding Chalmette.

\*\*\*Sites in water stress are Hamilton, Zelzate; Assessment done per https://www.wri.org/ sites considered as water stress which fall under following categories "high (40-80%)" and "extremely high (>80%)". This value changed compared to last year after a review of the data reporting process and due to a change of scope.



### **Material**

GRI	Indicator	Unit	2023	2022	2021 —
	Non-renewable raw material (including recycling) from Rain Carbon - internal and external sources	Metric Tons	2.709.320	2.805.580	3.190.216
	Renewable raw materials (including recycling)	Metric Tons	-	-	-
	Total recycled input materials used	Metric Tons	2.484	3.061	1.435
	Percentage of recycled input materials	%	0,09%	0,11%	0,04%

Annex

# Social



## **Total Number of Employees**

GRI	Location				
	Location	Location	2023	2022	2021
2-7	Belgium*		188	187	187
	Canada		88	92	85
	Germany		598	650	629
	India		461	456	408
	Poland		24	31	30
	United States		238	245	230
	Total		1,597	1,661	1,569

\*Excluding employees with long-term illness.

Annex

### **Permanent and Temporary Employees**

			Employee Count					
GRI	Gender	Location	20	23	202	22	202	21
			Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
2-7	Male	Belgium*	169	0	167	0	167	0
		Canada	72	3	74	5	69	1
		Germany	427	71	496	46	506	15
		India	453	8	440	15	407	0
		Poland	15	0	17	2	20	0
		United States	0 <sup>i</sup>	2 <sup>i</sup>	204	1	193	0
		Total Rain Carbon	1,136	84	1,398	69	1,362	16
	Female	Belgium	19	0	20	0	20	0
		Canada	13	0	13	0	15	0
		Germany	89	11	101	7	105	3
		India	0	0	1	0	1	0
		Poland	9	0	12	0	10	0
		United States	0 i	0 i	39	1	35	2
		Total Rain Carbon	130	11	186	8	186	5
	Total		1,266 <sup>i</sup>	95 <sup>i</sup>	1,584	77	1,548	21

<sup>1</sup> The definition and reporting process for this value changed in comparison to the last year's. Upon detailed review, it has been determined that the US does not have permanent employees. There are no employment contracts, so moving forward, all employees fall under RFT (regular full-time), PT (part-time) or seasonal.

Annex

## **Full-Time and Part-Time Employees**

			Employee Count					
GRI	Gender	Location	ation 2023		2022		2021	
			Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time
2-7	Male	Belgium*	153	16	149	18	149	18
		Canada	72	3	75	4	70	0
		Germany	488	10	531	11	513	8
		India	461	0	455	0	407	C
		Poland	15	0	19	0	20	0
		United States	197	1	204	1	193	С
		Total Rain Carbon	1,386	30	1,433	34	1,352	26
	Female	Belgium	14	5	16	4	15	5
		Canada	13	0	13	0	15	C
		Germany	76	24	90	18	87	21
		India	0	0	1	0	1	0
		Poland	7	2	12	0	10	C
		United States	39	1	38	2	37	C
	Total Rain Carbon	149	32	170	24	165	26	
	Total		1,535	62	1,603	58	1,517	52

\*\*Excluding employees with long-term illness.

Annex



### **Diversity (Gender and Age-Wise)**

**General Employees\*** 

CDI	Conden/Are	Employee Count	Percentage	Employee Count	Percentage	Employee Count	Percentage
GRI	GendenAge	2023		202	2	2021	
405-1	Male	1,383	89%	1,467	88%	1,457	87%
	Female	172	11%	194	12%	213	13%
	<30 years	287	18%	284	17%	260	16%
	30-50 years	765	49%	794	48%	804	48%
	>50 years	503	33%	583	35%	606	36%
	Total	1,597	100%	1,661	100%	1,670	100%

\*Total employees minus employees directly reporting to the executive team.

# 

# **Employees Directly Reporting to Executive Team**

CPI	Condor/Ago	Employee Count	Percentage	Employee Count	Percentage	Employee Count	Percentage
Ghi	GenuenAge	2023		2022		202	21
405-1	Male	33	79%	22	85%	36**	72%
	Female	9	21%	4	15%	11	28%
	<30 years	0	0%	0	0%	0	0%
	30-50 years	16	38%	11	42%	22	56%
	>50 years	26	62%	15	58%	17	44%
	Total	42	100%	26	100%	39	100%

\*\*Value corrected from last year

i This value changed compared to last year after a review of the data reporting process.

Annex

### **Executive Team**

		Employee Count	Percentage	Employee Count	Percentage	Employee Count	Percentage
GRI	Gender/Age	2023		2022		202 <sup>-</sup>	l i i i i i i i i i i i i i i i i i i i
405-1	Male	7	100%	7	100%	7	100%
	Female	0	0%	0	0%	0	0%
	<30 years	0	0%	0	0%	0	0%
	30-50 years	1	14%	2	29%	4	57%
	>50 years	6	86%	5	71%	3	43%
	Total	7		7		7	



## **Training and Performance Reviews\***

 CDI	Conder/Are		Percentage		~
Ghi	Gender/Age	2023	2022	2021	
404-3		67%*	63%*	90%*	
		[48% if			
	Employees receiving regular performance and career development reviews	calculated			
		based on all			
		employees]			

\* Based on all employees for whom respective reviews are foreseen.

Annex



## **Average Hours of Training**

			Average Trai	ning Hours/Empl	oyee
ŝRI	Gender	Location	2023	2022	2021
404-1	Male	Belgium	14.78	12.1	13.3
		Canada	7.89	20.1	21.9
		Germany	24.52	21.8	18.6
		India	-	12.0	7.8
		Poland	22.98	21.7	21.0
		United States	20.73	10.2	11.2
		Total Rain Carbon*		16.0	14.1
	Female	Belgium	35.34	14.3	7.5
		Canada	8.53	8.7	25.2
		Germany	17.62	18.4	12.9
		India	-	0.0	0.0
		Poland	5.56	9.7	2.3
		United States	17.09	8.8	6.4
		Total Rain Carbon*		14.8	11.3
	Total	Belgium	16.84	12.28	12.69
		Canada	7.98	18.51 <sup>i</sup>	22.49
		Germany	23.37	21.38 <sup>i</sup>	17.56
		India	25.41	12.02	7.82
	Poland	28.54	17.67	14.54	
		United States	20.12	10.03	11.24
	Total		22.30	15.90	13.99

\*Value could not be calculated as the numbers for India were only available in aggregated form.

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex

🔊 Sat

# Safety

_	וסי	Indiantex	Employee Count			
	זהו	indicator	2023	2022	2021	
4	03-9	Fatalities (No.)	0	0	0	
		Rate of Recordable Injuries (# Recordable Injuries Per 200,000 Working Hours)	0.256	0.16	<0.2	
		Rate of First-Aid Injuries (# First-Aid Injuries Per 200,000 Working Hours)	4.02	4.00	4.84	

Annex

# Products

Introduction

 GRI	Indicator	Unit	2023	2022	2021
	Share of raw materials that are by-products (upcycled) in Rain Carbon's operations.	%	>98	>98	>98
	Total R&D expenses (OPEX) as a share of revenue.	%	0.38	0.44	0.61
	Share of sales with products developed in the past five years for the Carbon Distillation and Advanced Materials businesses.	%	2.96	3.54	1.87







# 8.1 Stakeholder Engagement



**Investors and Stakeholders** 



#### **Government/Regulatory Bodies**



**Customers** 

- Conducting analyst meetings. ٢
- Sharing investor presentations, ۲ quarterly financial results.
- Regularly filing various statutory or informative reports and information with stock exchanges.
- Issuing press releases. ٢
- Interacting with statutory/regulatory ٢ bodies, such as stock exchanges, tax departments, and other government departments as and when required.
- Conducting vendor meetings. ٢
- Having procurement policies and a vendor-selection process.
- Conducting supplier visits and meetings, as well as vendor-review meetings.
- Requesting proposals from customers. ۵
- Conducting client visits and meetings. ٢
- Making initial contact and pitches. ۵
- Addressing client feedback. ٨
- Building relationships in sales. ۵
- Identifying emerging client needs. Ø



Social

community meetings. Issuing press releases for organizational

awareness.

Conducting site visits and local

- Providing financial support to build and maintain community-based infrastructure in villages, such as roads and community centers.
- Contributing to local welfare activities such as education.
- Maintaining schools and hospitals through the Pragnya Priya Foundation in rural Telangana and Andhra Pradesh.



**Employees** 

- Offering the Global Leader Development Program, which began in 2017.
- Providing the Leading Leaders Program and virtual, personal development sessions.
- Discussing performance evaluations on four dimensions - conduct, knowledge, management skills and work results and agreeing on personal development goals and activities.
- Providing employee assessment training programs for supervisors across our global footprint.
Social

Annex

## 8.2 About this Report

The 2023 Rain Carbon Inc. Sustainability Report follows the GRI Standards and covers the period from January 01 - December 31, 2023, aligning with the Company's financial reporting period. The report is published in July 2024 and is an annual publication by Rain Carbon Inc.

Introduction

Some data and key figures from the previous year's report have been revised following an extensive review of Rain Carbon's data reporting process. While this report has not undergone external assurance, the data mentioned in the assurance statement was audited by the independent entity, DQS. The assurance statement can be found on page 123 and 124.

The production of this Sustainability Report was supported by the external consulting agency LRQA. This report and the presented data cover Rain Carbon Inc. and its producing subsidiaries, Rain CII Carbon LLC, Rain CII Carbon (Vizag) Limited, Rain Carbon Canada Inc., Rain Carbon BV, Rain Carbon Germany GmbH and Rain Carbon Poland Sp. z o. o.

This document is the exclusive intellectual property of Rain Carbon Inc.



For any inquiries, feedback, or suggestions, please contact:

Dr. Rolf Roers, Vice President Regulatory Affairs & Sustainability

Email at: sustainability@ raincarbon.com



Social

Annex

# 8.3 GRI content index

Introduction

Statement of use: Rain Carbon has reported in accordance with the GRI Standards for the period January 01, 2023 to December 31, 2023.

Disclosure The organization and its reporting 2 – 1 Organizational details 2 – 2 Entities included in the	Location practices pp. 9-10	Omission	Additional Information
The organization and its reporting 2 – 1 Organizational details 2 – 2 Entities included in the	practices pp. 9-10		
The organization and its reporting 2 – 1 Organizational details 2 – 2 Entities included in the	practices pp. 9-10		
2 – 1 Organizational details 2 – 2 Entities included in the	pp. 9-10		
2 – 2 Entities included in the	0 4 0 0		
organization's sustainability reporting	pp. 9, 109		Included are Rain Carbon Inc. and its producing subsidiaries Rain CII Carbon LLC, Rain CII Carbon (Vizag) Limited, Rain Carbon Canada Inc. Rain Carbon BV, Rain Carbon Germany GmbH, and Rain Carbon Poland SP. z o. o.
2-3 Reporting period, frequency and contact point	p. 109		
2 – 4 Restatements of information	p. 109		
2 – 5 External assurance	p. 109		
Activities and workers			
2 – 6 Activities, value chain, and other business relationships	pp. 3, 9		
2 – 7 Employees	pp. 99-101		
	<ul> <li>2 – 2 Entities included in the organization's sustainability reporting</li> <li>2 – 3 Reporting period, frequency and contact point</li> <li>2 – 4 Restatements of information</li> <li>2 – 5 External assurance</li> <li>Activities and workers</li> <li>2 – 6 Activities, value chain, and other business relationships</li> <li>2 – 7 Employees</li> </ul>	2 - 2 Entities included in the pp. 9, 109         organization's sustainability reporting         2 - 3 Reporting period, frequency and contact point         2 - 4 Restatements of information p. 109         2 - 5 External assurance         2 - 6 Activities, value chain, and pp. 3, 9         other business relationships         2 - 7 Employees	2 - 2 Entities included in the proganization's sustainability reporting       pp. 9, 109         2 - 3 Reporting period, frequency p. 109         and contact point       p. 109         2 - 4 Restatements of information       p. 109         2 - 5 External assurance       p. 109         Activities and workers       p. 109         2 - 6 Activities, value chain, and pp. 3, 9       pp. 3, 9         elationships       pp. 99-101

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex

GRI Standard	Disclosure	Location	Omission	Additional Information
	2 – 8 Workers who are not employees		Information unavailable/incomplete: Contractors are managed locally at each site. The number of contractor employees is currently not being assessed by the sites. Rain Carbon is currently adapting the HR systems to report these numbers in the next years.	
	Governance			
GRI 2: General Disclosures 2021	2 – 9 Governance structure and composition	pp. 85-86 <u>Website</u>		
	2 – 10 Nomination and selection of the highest governance body	pp. 85-86		
	2 – 11 Chair of the highest governance body	pp. 85-86		
	2 – 12 Role of the highest governance body in overseeing the management of impacts	pp. 85-86		c.: The highest governance body is currently not actively reviewing the effectiveness of the organization's ESG due diligence processes but is informed about significant sustainability impacts of the business activities and the management of these.
	2 – 13 Delegation of responsibility for managing impacts	pp. 85-86		
	2 – 14 Role of the highest governance body in sustainability reporting	pp. 12, 85-86		
	2 – 15 Conflicts of interest	p. 85		

0011001100
------------

Social

- 14	A DI	пех

GRI Standard	Disclosure	Location	Omission	Additional Information
	2 – 16 Communication of critical concerns		b.: Information unavailable/incomplete: There is not yet an aggregated view on all critical concerns raised by defined stakeholder categories, except from non-compliances with laws and regulations. We acknowledge the importance of this topics and are working on the implementation of respective processes in the next five years.	a.: There are no formalized processes how critical concerns are brought to the BoD (non-financial compliance issues) or audit committee (financial compliance issues). The procedure depends on the case.
	2 – 17 Collective knowledge of the highest governance body	p. 86		
	2 – 18 Evaluation of the performance of the highest governance body		Information unavailable/incomplete: So far, no formalized processes have been developed to evaluate the performance of the RCI BoD's oversight of the management of Rain Carbon's impacts on the economy, environment and people. A standardized approach for the upcoming reporting years is being discussed.	
	2 – 19 Remuneration policies	p. 85	a.: Confidentiality constraints: due to confidentiality reasons, Rain Carbon does not disclose remuneration data of its employees.	
	2 – 20 Process to determine remuneration	p. 85		a. iii., b.: For the remuneration process of the highest governance body, the views of stakeholders and remuneration consultants are not considered.
	2 – 21 Annual total compensation ratio		Information unavailable/incomplete: There is currently no standardized approach for collecting this indicator in a meaningful way on a global basis. RCI is working on a collection method and plan to be able to collect this indicator for the next reporting years.	

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex

GRI Standard	Disclosure	Location	Omission	Additional Information
	Strategy, policies and practices			
GRI 2: General Disclosures 2021	2 – 22 Statement on sustainable development strategy	pp. 6-7		
	2 – 23 Policy commitments	pp. 15-16, 87- 89		c.: The Code of Conduct and the other policies mentioned in the text are currently not publicly available, but RCI is considering their publication in the upcoming years.
	2 – 24 Embedding policy commitments	pp. 15-16, 87- 89		
	2 – 25 Processes to remediate negative impacts	pp. 87-89		c.: RCI does not have a formal process to remediate negative impacts but acts on a case by case basis. Rain Carbon provides information on grievance mechanisms to internal stakeholders through the Escalation and Reporting Policy. Rain Carbon will work on the formalization and communication of this process in the next reporting years.
	2 – 26 Mechanisms for seeking advice and raising concerns	p. 89		
	2–27 Compliance with laws and regulations		Information unavailable/incomplete: There is currently no consistent definition of this indicator internally and therefore no annual tracking system. RCI works on a uniform definition and data collection in the next 3-5 years.	
	2–28 Membership associations	p. 92		
	Stakeholder engagement			
GRI 2: General Disclosures 2021	2–29 Approach to stakeholder engagement	pp. 91-92, 108		

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex

GRI Standard	Disclosure	Location	Omission	Additional Information
	2–30 Collective bargaining agreements	p. 83		
Material topics				
GRI 3: Material Topics 2021	3–1 Process to determine material topics	p. 12		
	3-2 List of material topics	pp. 12-13		
GHG Emissions &	Energy			
GRI 3: MaterialTopics 2021	3 – 3 Management of material topics	pp. 18, 20-30		
GRI 302: Energy 2016	302 – 1 Energy consumption within the organization	p. 94	a d.: Information unavailable/incomplete: RCI's energy management system uses different categorizations than suggested by GRI. The Company will consider aligning the internal system with GRI in the upcoming years.	
	302 – 2 Energy consumption outside of the organization		Not applicable: RCI does not operate or outsource any activities outside of the organization which consume energy.	
	302 – 3 Energy intensity	p. 94		
	302 – 4 Reduction of energy consumption		Information unavailable/incomplete: It is currently not possible to measure the total reduction as a sum of all implemented efficiency measures. The effects are shown in the overall energy consumption but cannot be separated from other factors. RCI will consider to establish a system to holistically monitor reductions through energy efficiency measures for the upcoming report.	

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex

GRI Standard	Disclosure	Location	Omission	Additional Information
	302 – 5 Reductions in energy requirements of products and services		Not applicable: RCI's products do not consume any energy but are further processed.	
GRI 305: Emissions 2016	305–1 Direct (Scope 1) GHG emissions	pp. 27-28, 95		
	305–2 Energy indirect (Scope 2) GHG emissions	pp. 27-28, 95		
	305 – 3 Other indirect (Scope 3) GHG emissions		Information unavailable/incomplete: During 2023, RCI initiated a major cross-company project in order to assess its Scope 3 emissions in line with the GHG Protocol. All Scope 3 categories were evaluated and based on relevance and data availability, the Company selected the most significant categories for its initial Scope 3 data collection. RCI plans to include the Scope 3 emission-related data in its general annual sustainability data collection starting next year.	
	305 – 4 GHG emissions intensity	p. 27, 95		
	305 – 5 Reduction of GHG emissions		Information unavailable/incomplete: It is currently not possible to measure the total reduction as a sum of implemented reduction measures. The effects are shown in RCI's footprint but cannot be separated from other factors. RCI will consider to establish a system to holistically monitor GHG reduction measures for the upcoming report.	
Own disclosure	GHG emissions avoided from waste-heat recovery	p. 29-30, 95		
	Energy generated from waste-heat recovery	p. 29-30, 94		

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex

GRI Standard	Disclosure	Location	Omission	Additional Information
Waste & water				
GRI 3: MaterialTopics 2021	3 – 3 Management of material topics	pp. 18, 32-37		
GRI 303: Water and Effluents 2018	303–1 Interactions with water as a shared resource	pp. 32-37		
	303 – 2 Management of water discharge-related impacts	pp. 32-37		
	303 – 3 Water withdrawal	p. 36, 98	a, b, c: Information unavailable/incomplete: A breakdown of different water sources will be provided in the next reporting year as there is currently a data improvement project ongoing which will lead to more reliable data.	
	303 – 4 Water discharge	p. 36, 98	a, b, c: Information unavailable/incomplete: A breakdown of different destinations will be provided in the next reporting year as there is currently a data improvement project ongoing which will lead to more reliable data.	
	303 – 5 Water consumption		Not applicable: Water withdrawal includes water sourced from surface waterbodies (both fresh and saltwater), groundwater aquifers or third-party suppliers. However, the discharge also encompasses stormwater and rainwater which is treated by RCI before release. As a result, calculating water consumption by subtracting discharge from withdrawal doesn't accurately represent Rain Carbon's operations and is therefore not calculated.	

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex

GRI Standard	Disclosure	Location	Omission	Additional Information
GRI 306: Waste 2020	306 – 1 Waste generation and significant waste-related impacts	pp. 32-35, 37		
	306–2 Management of significant waste-related impacts	pp. 32-35, 37		
	306 – 3 Waste generated	pp. 35, 97		
	306 – 4 Waste diverted from disposal	p. 97		
	306 – 5 Waste directed to disposal	p. 97		
Air Emissions (No	n-GHG)			
GRI 3: MaterialTopics 2021	3-3 Management of material topics	pp. 18, 39-41		
GRI 305: Emissions 2016	305 - 7 Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant air emissions	p. 96		
Innovative & Sust	ainable Product Portfolio			
GRI 3: MaterialTopics 2021	3 – 3 Management of material topics	pp. 43, 45-56		
Own disclosure	Total R&D expenses (OPEX) as share from revenue	p. 106		
	Share of sales with products developed in the past five years for carbon distillation and advanced materials	p. 106		

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex

GRI Standard	Disclosure	Location	Omission	Additional Information
	Share of sales with products developed in the past five years for the Carbon Calcination business	p. 106		
Circularity of Feed	dstocks & Products			
GRI 3: MaterialTopics 2021	3 – 3 Management of material topics	pp. 43, 58-62		
Own disclosure	Share of raw materials that are by-products ("upcycled")	p. 106		As RCI uses industrial by-products from heavy industries, the share of renewable or recycled materials are less relevant and do not reflect the impact of the Company accurately. Instead of reporting the GRI Indicators on this topic, RCI therefore chose to disclose an own indicator, which gives more valuable information about the business.
Health & Safety (i	ncl. Product Stewardship)			
GRI 3: MaterialTopics 2021	3–3 Management of material topics	pp. 64-65, 67- 74		
GRI 403: Occupational Health and Safety 2018	403 – 1 Occupational health and safety management system	pp. 68-69		
	403 – 2 Hazard identification, risk assessment, and incident investigation	pp. 71-72		
	403–3 Occupational health services	p. 71		

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex

GRI Standard	Disclosure	Location	Omission	Additional Information
	403 – 4 Worker participation, consultation, and communication on occupational health and safety	pp. 68-69		
	403–5 Worker training on occupational health and safety	p. 70		
	403–6 Promotion of worker health	p. 73		
	403 – 7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	pp. 73-74		
	403 – 8 Workers covered by an occupational health and safety management system	pp. 68-69		
	403 – 9 Work-related injuries	pp. 69, 105	Information unavailable/incomplete: The internal controlling system currently tracks fatalities and rates of recordable and first-aid injuries among the employees. RCI does not track the number and rate of high consequence work-related injuries as this is no category of the internal controlling system. RCI also does not collect the types of work-related injuries. RCI will check the alignment of the internal system with GRI for the future	
	403 – 10 work-related ill-health		Information unavailable/incomplete: RCI does currently not track work-related ill-health. The Company is considering this in the upcoming years.	

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex

GRI Standard	Disclosure	Location	Omission	Additional Information
Employee empow	erment and continuity			
GRI 3: MaterialTopics 2021	3 – 3 Management of material topics	pp. 64-65, 76- 79		
GRI 401: Employment 2016	401 – 1 New employee hires and employee turnover		Information unavailable/incomplete: RCI does currently not track these numbers but will consider it in the next report.	
	401 – 2 Benefits provided to full-time employees that are not provided to temporary or part-time employees			RCI does not provide benefits to full-time employees that are not provided to temporary or part-time employees.
	401 – 3 Parental leave		Information unavailable/incomplete: RCI currently does not track these numbers, but will consider it in the next report.	
GRI 404Training and Education 2016	404 – 1 Average hours of training per year per employee	pp. 78, 104	a, ii: Information unavailable/incomplete: RCI is currently only monitoring this KPI in total, per region and gender, and not per employee category. RCI will check the feasibility of expanding our KPIs in the next reporting years.	
	404 – 2 Programs for upgrading employee skills and transition assistance programs	p. 78		
	404–3 Percentage of employees receiving regular performance and career development reviews	pp. 78, 103	a: Information unavailable/incomplete: RCI is currently only monitoring this KPI in total and not per gender and employee category. RCI will check the feasibility of expanding the KPIs in the next reporting years.	RCI is calculating this number based on all employees for whom respective reviews are foreseen. Additionally, the value calculated based on all employees is provided in the data table as well.

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex

GRI Standard	Disclosure	Location	Omission	Additional Information
GRI 405 Diversity and Equal Opportunity 2016	405–1 Diversity of governance bodies and employees	p. 103		
	405 – 2 Ratio of basic salary and renumeration of women to men		Information unavailable/incomplete: RCI does currently not track these numbers but will consider it in the next report.	
Labour and huma	n rights			
GRI 3: MaterialTopics 2021	3 – 3 Management of material topics	pp. 81-83		
GRI 407: Freedom of Association and Collective Bargaining 2016	407 – 1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	p. 81		RCI does not yet have a structured procedure for assessing the risk of restricting freedom of association and collective bargaining at suppliers.
GRI 408: Child Labor 2016	408 – 1 Operations and suppliers at significant risk for incidents of child labor	p. 81		RCI follows the legal obligations in all countries where it operates. None of the own operations are at significant risk for incidents of child labor. There is currently no systematic assessment of suppliers.
GRI 409: Forced or Compulsory Labor 2016	409 – 1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	pp. 81, 83		RCI follows the legal obligations in all countries where it operates. None of the own operations are at significant risk for incidents of forced or compulsory labor. There is currently no systematic assessment of suppliers.
GRI 414: Supplier Social Assessment 2016	414 – 1 New suppliers that were screened using social criteria	p. 83		RCI is currently not systematically screening new suppliers against social criteria. RCI is striving to implement sustainable procurement standards across the Business Unit and departments in the next two years.

Contents	Introduction	Sustainability Strategy	Environment	Products	Social	Sustainability Governance	Data & Performance	Annex

GRI Standard	Disclosure	Location	Omission	Additional Information
	414 – 2 Negative social impacts in the supply chain and actions taken	p. 83		RCI is currently not screening new suppliers systematically against social criteria. RCI is striving to implement sustainable procurement standards across the Business Unit and departments in the next two years.
Own indicator	Employees trained on Rain Carbon's Code of Conduct	p. 81		
Business ethics and governance				
GRI 3: MaterialTopics 2021	3 – 3 Management of material topics	pp. 85-90		
GRI 205: Anti- corruption 2016	205 – 1 Operations assessed for risks related to corruption			There are currently no operations assessed for risks related to corruption. However, all of RCI's operations need to follow the Anti-Bribery & Anti- Corruption Policy.
	205 – 2 Communication and training about anti-corruption policies and procedures	pp. 87-88		
	205 – 3 Confirmed incidents of corruption and actions taken	pp. 87-88		

# 8.4 Independent Assurance Statement

### dqs

#### Independent Assurance Statement

#### To the Management and Stakeholders of Rain Industries Limited

DQS has been engaged by Rain Industries to provide independent assurance over a specific set of environmental, human resources and health and safety performance indicators. Rain Industries Limited covers amongst other the two businesses Rain Carbon Inc. and Rain Cements Limited. The random sample approach is representative for Rain Cements Limited (both facilities are included) and for Rain Carbon Inc. (random selection of sites). The engagement took place in February 2024 and was concluded on February 16, 2024.

#### Objectives

The objective of this assurance engagement was to independently express conclusions on underlying reporting processes and validate qualitative and quantitative claims, so as to limit misinterpretation by stakeholders and increase the overall credibility of the reported information and data.

#### Scope of assurance

The assurance encompassed selected environmental, human resources and health and safety data from the reporting period January 2023 to December 2023. More specifically, this included:

- Rain Carbon Inc. and Rain Cements Limited reported environmental data and information incl. the following GRI disclosure: GRI 301-1/-2; 302-1/-3; 303-3/-4; 305-1/-2/-4/-7; 306-3/-4/-5;
- Rain Carbon Inc. additional reported human resources and health and safety data incl. the following GRI disclosure: GRI 2-7; 403-9; 404-1/-3; 405-1

The assurance engagement was performed in accordance with a Type 2 assurance of the AA1000 Assurance Standard (AA1000AS v3), which consists of:

- Evaluating the company's sustainability framework and processes using the inclusivity, materiality, responsiveness and impact criteria of the AA1000 AccountAbility Principles (AA1000APS 2018), though limited to the selected indicators listed above, and
- · Evaluating the quality of the reported sustainability performance information.

#### Level of assurance and limitations

A moderate level of assurance under AA1000AS was provided for this engagement. Information and performance data subject to assurance is limited to the scope described above.

The assurance did not cover financial data, technical descriptions of buildings, equipment and production processes or other information not related to sustainability.

DQS CFS GmbH August-Schanz-Straße 21 60433 Frankfurt am Main Germany AA1000 Licensed Assurance Provider

www.dgsglobal.com



The assurance engagement is not a compliance audit and does not assess or evaluate compliance with applicable laws and regulations.

#### Independence and Competences of the Assurance Provider

The DQS Group is an independent professional services firm that provides assurance on sustainability disclosures under the Global Reporting Initiative (GRI), CDP and other specialized management and reporting mechanisms. Independent verifiers have not been involved in the development of the report nor have they been associated with Rain Industries's sustainability program, data collection or strategic processes.

DQS Group ensures that the assurance team possesses the required competencies, maintained neutrality and performed ethically throughout the engagement. Further information, including a statement of impartiality, can be found at: <a href="https://www.dgsglobal.com">www.dgsglobal.com</a>.

The management of Rain Industries was responsible for the preparation of the sustainability data.

#### Assurance Methodology

The assurance procedures and principles used for this engagement were drawn from the International Standard AA1000 and methodology developed by DQS, which consists of the following steps:

- Identifying statements and data sets, which are classified according to the relevant data owners and the type of evidence required for the verification process.
- 2. Reviewing the Guidance Document for the Sustainability Data Management
- Identify samples of data to be assessed, reflecting the structure and operations of Rain Carbon
- Assessing the collected information and provide recommendations for immediate correction where required or for future improvement of the report content.

The sampling approach covered all indicators without human resources and health and safety performance indicators in India sites within the scope, for the following sites:

- Rain Carbon Inc., Castrop-Rauxel, Germany
- Rain Carbon Inc., Zelzate, Belgium
- Rain Carbon Inc., Hamilton, Canada
- Rain Carbon Inc., Gramercy, United States
- Rain Carbon Inc. Lake Charles United States
- Rain Carbon Inc., Robinson, United States
- Rain Carbon Inc., Atchutapuram, India
- Rain Cements Limited, Nandyal (previously Kurnool), India

AA1000

000-169

Licensed Assurance Provider

Rain Cements Limited, Survapet, India

DQS CFS GmbH August-Schanz-Straße 21 60433 Frankfurt am Main Germany

www.dqsglobal.com

### dqs

#### **Evaluation of Data Quality**

Nothing has come to our attention that causes us to believe that the environmental, human resources and health and safety performance indicators of Rain Industries are materially misstated. The definitions, boundaries, assumptions, procedures and responsibilities for data management are described in a comprehensive and transparent manner. The data templates for collecting and consolidating the data are structured in such a way as to enable independent verification.

Through a sampling procedure, the assurance team found that the sites generally adhere to the procedures set out in the guidance document. For certain sites, the assurance team noted isolated lapses in data quality, which did not affect the overall reliability of the reported information. Most of these lapses have been corrected during the course of the assurance engagement. For the remaining issues, measures will be taken to improve data quality in future reporting cycles even further

It is recommended that Rain Industries continues the current data management approach and uses the findings of this initial assurance engagement to improve data guality even further. The assurance team also recommends establishing tighter controls on evidence keeping, in order to ensure that all sites adhere to the same high evidence keeping standards.

#### Evaluation of the adherence to AA1000 AccountAbility Principles

Inclusivity - People should have a say in the decisions that impact them

The stakeholder identification and engagement process was outside the scope of the assurance engagement.

Materiality - Decision makers should identify and be clear about the sustainability topics that matter

The data included in the scope of the assurance engagement consists of performance indicators for environmental, human resources and health and safety. The materiality assessment itself was outside the scope of the assurance engagement.

Responsiveness - Organizations should act transparently on material sustainability topics and their related impacts

Rain Industries is responding to those issues that it has identified as material and demonstrates this in its environmental, human resources and health and safety performance indicators. The organization and its stakeholders can use the reported information as a reasonable basis for their opinions and decision-making.

Impact - Organizations should monitor, measure and be accountable for how their actions affect their broaders ecosystems

Rain Industries has implemented systems to monitor and measure its impacts, through selected performance indicators based on the GRI standards.

DQS CFS GmbH August-Schanz-Straße 21 60433 Frankfurt am Main Germany

AA1000 Licensed Assurance Provider

www.dqsqlobal.com



#### Conclusion

On the basis of a moderate assurance engagement according to the above-listed criteria, nothing has come to our attention that causes us to believe that the environmental, human resources and health and safety performance indicators of Rain Industries are materially misstated.

On behalf of the assurance team

February 20, 2024

Frankfurt, Germany

Juico Eggas

**Guido Eggers** Managing Director DQS CFS GmbH



DQS CFS GmbH August-Schanz-Straße 21 60433 Frankfurt am Main Germany

AA1000 Licensed Assurance Provider

000-169

www.dqsglobal.com

it's an SGA osvita creation adsvita.com

